DRAFT: PREPARED AS ABSTRACT AND DRAFT PAPER FOR THE 2013 PAA ANNUAL MEETING – DO NOT CITE

Pioneer Dispersion of Immigrants during the 1990s: Determinants and Origin Group Differentials

Douglas T. Gurak

Mary M. Kritz

Department of Development Sociology

Cornell University

Ithaca, NY

The research in this paper was conducted at the New York Census Research Data Center while the authors were Special Sworn Status researchers of the U.S. Census Bureau. Any opinions and conclusions expressed herein are those of the authors and do not necessarily reflect the views of the census Bureau. All results have been reviewed to ensure that no confidential data are disclosed. Support from NSF (ITR-0427889) for this research is gratefully acknowledged. We also acknowledge grant support from the Russell Sage Foundation (RSF #88-07-03).

Corresponding Author:

Douglas T. Gurak

dtg2@cornell.edu

ABSTRACT

For thirteen Hispanic, Asian, and Caribbean immigrant groups, this paper examines the process of immigrant dispersion during the 1990s, focusing on place factors associated with settlement in areas where no group members lived in 1990. The objective is to evaluate the relative importance of economic, demographic, social and co-ethnic correlates of pioneer settlement in new destinations and the extent to which these processes vary across immigrant groups. Using confidential decennial Census data, each of 741 labor markets are classified as unsettled or "empty" for each immigrant group if it had no members there in 1990. For each of the 13 groups, Zero-inflated Poisson (ZIP) regressions are estimated to specify the characteristics of labor markets that received higher counts of pioneer settlers. The major determinants include distance from a group's closest top-5 gateway, size of population in 1990, economic characteristics, native-born population growth, and the settlement history of other ethnic populations.

The process of immigrant dispersion in the United States has involved increasing settlement in "new gateways" such as Atlanta, Charlotte, Nashville and other metropolitan and non-metropolitan areas throughout the country that had relatively few immigrants before 1990. It is often forgotten that the dispersion process started initially with some immigrants settling in places where no members of their group had previously settled and that for many immigrants from some national origins, that process is still just beginning. The forces that drive immigrants' initial settlements in "group-unoccupied" places and the processes that follow such pioneer settlements remain poorly understood due to data limitations on immigrant settlements in dispersed places and because today's immigrants have favored metropolitan areas over rural places and small towns and cities. In general, the new and emerging gateways that Singer (2004) and others (Fischer and Tienda 2006; Singer, Hardwick and Brettell 2008) have identified are relatively large metropolitan areas. But despite immigrants' continued preference for larger places, their numbers have also steadily increased in smaller and more rural places. At some point in this process, one or more immigrants from a particular national origin started moving to places where few or no one from their same origin had preceded them. Although it is known that social networks and resources influence immigrants' initial settlement decisions upon U.S. arrival (Gurak and Caces 1992; Massey 1990; Massey et al. 1987), knowledge of what attracts immigrants to places where they have no compatriots is minimal.

This paper addresses that issue by examining the process of initial or early stage settlement of immigrants from thirteen national origins in places where none of their compatriots lived in 1990. To do so we use Census Confidential Use Microdata Samples (CUMS), which are the only national-level data that have both a large number of immigrant cases and detailed information on immigrants' geographic locations in small metropolitan and non-metropolitan areas. The CUMS

are a 16 percent population sample and their use at restricted access Census Research Data Centers allows researchers to examine the full sample and build spatial units that have standardized boundaries across time.[1] The focus on thirteen groups represents an effort to balance the need to recognize that immigrant settlement processes vary significantly by national origin with the competing need for parsimony. The thirteen groups consist of the five largest Latino immigrant groups (Mexicans, Cubans, Salvadorans, Dominicans, and Colombians), the five largest Asian immigrant groups (Filipinos, Chinese, Indians, Vietnamese, and Koreans), and three other large immigrant groups originating in the Caribbean basin (Jamaicans, Haitians, and Guyanese). We focus on immigrants from non-European countries because most of them have come from developing countries in recent decades and questions have been raised about whether their integration and assimilation experiences will differ from those of European immigrants in the past century (Denton and Massey 1988; Massey and Denton 1987; Massey and Sánchez 2009; Scopilliti and Iceland 2008). Immigrants from Asia, Latin America and the Caribbean differ markedly on factors that influence migration, including educational attainment, occupational profiles, family structure, migration histories, residential patterns, and legal statuses (Bartel and Koch 1991; Frey and Liaw 1999; Kritz and Nogle 1994). While immigrants from Latin America or Asia are often aggregated into Latino or Asian categories, findings based on those groupings are confounded by divergent socio-economic and residence patterns across national origins and differential group sizes (Kandel and Parrado 2005; Odem and Lacy 2009; Parrado and Kandel 2008). In the case of Latinos, for instance, Mexicans constitute over 60 percent of all immigrants from Spanish-speaking countries, which means that their relatively low socio-economic profile weigh down statistics for other Latinos.

[1] All data and analyses obtained at Census Research Data Centers have to undergo a disclosure process to assure that respondents' privacy is protected and our findings have been approved by the Bureau Disclosure Review Board.

The paper starts with a review of explanations regarding why immigrants are moving to new destinations albeit that discussion is brief given that we have not uncovered any papers that look at initial settlement – most new destination research to date has focused on shifts in immigrants' geographic settlements in different states or involved case studies of immigrants in particular communities or regions (Goździak and Martin 2005; Marrow 2011; Massey 2008; Odem and Lacy 2009). Then we describe the dispersion statuses of these immigrant groups and the components of change for each group during the 1990s - all thirteen groups experienced significant dispersion to destinations where they had no compatriots at the start of that decade and were settled in more labor markets in 2000 than they were in 1990. The analysis also reveals a more complex dynamic, namely that all the groups also experienced net outflows from many labor markets in the 1990s and all groups had labor markets settled in 1990 where they had no origin group members present in 2000. That finding alone suggests that immigrant dispersion to new destinations is not a linear process but involves a lot of churning as immigrants explore new destinations. In order to explore factors associated with this churning process, we use regression analysis and estimate separate models for each origin group given that the number and types of destinations settled vary across groups as do the economic, demographic, social and co-ethnic characteristics of destinations and origin groups.

Data and Measurement

The spatial units used to examine new destination settlement patterns consist of 741 geographic units that cover the entire country and that have identical boundaries across time. These units were built drawing on a set of geo-units developed by Tolbert (2006; 1996) that used cluster analysis to identify contiguous counties with close economic and social linkages and commuting patterns in 1990. They are composed of counties or county equivalents and are relatively small and

homogeneous. Those with the largest populations approximate standard metropolitan statistical areas (SMSAs) while others have smaller populations that spread across larger territories in non-metropolitan areas. Using this set of geographic unit it is possible to examine the importance of economic and social context in local labor markets more carefully than previous studies have been able to do that have been based on states or a limited set of metropolitan areas. To measure change between 1990 and 2000 for each origin group, individual-level CUMS files were used to specify first each group's settlement levels and change in all 741 labor markets. The resulting origin group indicators were then merged with other economic, spatial and social indicators for the 741 labor markets to build an aggregate-level data base that is used for the analysis. Although it would be informative to extend the analysis beyond 2000 by using American Community Survey (ACS) data, that extension would not be a straightforward process due to sampling design differences between the decennial census long form and the ACS.[2]

For each origin group, zero-inflated Poisson (ZIP) models are estimated to describe the characteristics of labor markets associated with two outcomes: a) the numbers of immigrants who occupied empty labor markets in the 1990s, and b) those that remained empty or had no immigrants from a given origin in both 1990 and 2000 (Long and Freese 2006).[3] Since those numbers or counts vary for each group (col. c., Table 1) as well as the counts of the labor markets occupied (col. d, Table 1) and ones left unoccupied (col. e, Table 1), separate models have to be

[2] There would be no problem involving the specification of labor markets with identical boundaries but based on preliminary analysis, the decennial census and ACS provide distinct pictures of just which places have been settled by immigrants from different origins. The five-year confidential ACS files have less than half the foreign-born cases that were available in the confidential 2000 decennial census. A comparison of geographic areas settled in 2000 and 2005-2009 indicates that a large number geographic areas that had foreign born in 2000 had none in the in the five-year file. While this can occur through the churning process described in this study, given the large number of such places in the ACS, it is more likely that some portion of the emptying process is due to sample design differences for the two datasets.

[33] We are grateful to Paul Voss for suggesting the use of ZIP regression for the analysis of pioneer settlement.

estimated for each group. While Poisson models provide an appropriate means for linking covariates to count magnitude, a relatively large number of labor markets remained unsettled in 2000 for all the groups except Mexicans and high frequencies of zero counts are problematic for standard Poisson models. The Poisson ZIP models handle zero cases by estimating two equations simultaneously for the labor markets that were empty in 1990: a Poisson regression of positive counts on a set of predictors, and a logistic regression of negative counts (dichotomous zero-outcome categories) on a set of predictors. Different predictors can be used for the two equations. Because the ZIP models are only estimated for the labor markets that had no immigrants from a given origin in 1990, the sets of labor markets at settlement risk vary across groups. Groups that were very concentrated in 1990 have a much larger set of labor markets that could be settled than groups (such as Mexicans or Filipinos) that were already highly dispersed in 1990 (see Figure 1). In addition, the "at risk" labor markets for the more concentrated groups are likely to include more places with larger populations and greater variation in labor market characteristics. It is important to keep these caveats in mind when assessing the observed empirical patterns.

Overview of Immigrant Group Dispersion

By 1990 immigrants from a broad range of Latin American, Asian, and Caribbean origins already had high levels of dispersion throughout the United States though the degree of dispersion varied significantly across groups and tended to be unrecognized at that time (Funkhouser 2000). Using a "*spatial dispersion*" approach (percent of places where members of an origin group were located), rather than a "*group concentration*" approach (percent of group in most concentrated places) Mexicans were the most spatially dispersed of the thirteen immigrant groups in 1990 – 89 percent of the 741 labor markets already had some settled Mexicans at that point in time (Figure 1). In 1990, over half of the labor markets also had some settled Filipinos (82.6%), Koreans (80.2%),

Indians (68.3%), Chinese (62.3%), Vietnamese (61.7), Cubans (52.9), and Colombians (51.4). During the 1990s, however, spatial dispersion gained momentum and by 2000 nine of the groups had some nationals in over 60 percent of the areas. Only Haitians and Guyanese continued to be spatially concentrated with a presence in fewer than 40 percent of labor markets. While the groups that are more spatially dispersed tend to have larger populations, Colombians and Jamaicans had smaller populations than Dominicans in 2000 but lived in a larger number of areas. During the 1990s, Salvadorans settled the most additional labor markets (194, col. d, Table 1) followed by the Chinese (157), Colombians (146), Dominicans (139), Indians (134), Vietnamese (133) and Haitians (127). Given that Mexicans, Filipinos and Koreans were already located in over 80 percent of the labor markets in 1990, there were fewer places left for them to settle but as Figure 1 shows, they continued their expansion to many of those places. By 2000 Mexicans lived in 97 percent of the labor markets and could be considered as having a universal settlement spread throughout the country.

In spite of what the trends shown in Figure 1 suggest, the dispersion process was considerably more fluid in the 1990s. For instance, all 13 groups experienced significant net out-migration from a large number of labor markets during the 1990s. Cubans and Koreans had the largest number of labor markets that lost group population (136 and 123, respectively) while Mexicans had the fewest labor markets with population declines (36). Haitians and Salvadorans also lost population in relatively few places (45 and 52, respectively (col. f, Table 1). The implication of this net outmigration pattern given that all of the groups became more spatially dispersed in the 1990s is that immigrants appear to be exploring alternative destination sites and leaving many new destinations for other places (Kritz, Gurak and Lee 2011). For some groups, net migration was more dramatic than simply having more people leave than enter (col. f, Table 1). All

thirteen groups, for instance, had labor markets settled in 1990 that had no group members in 2000. This occurred for only five labor markets that Mexicans had settled by 1990 but was a considerably more common event for other origin groups: 13 labor markets lost all 1990 Haitians by 2000 while over 40 labor markets that had Colombians, Cubans, Guyanese and Dominicans in 1990 had none in 2000 (col g, Table 1). Despite this evidence of considerable population churning in new destinations, labor market population growth was the norm for all groups. Haitians, for instance, were the most concentrated group in 2000 but they experienced population growth in 246 labor markets. At the other extreme Mexicans experienced growth in 682 labor markets and Koreans, Filipinos, Indians and Chinese in over 500.

The immigrants that settled new destinations in that decade can be considered pioneers and, as such, are relatively few in numbers. Previous research indicates that most immigrants moving to new destinations migrate internally rather than arriving directly from abroad (Kritz and Gurak 2012). The total numbers of pioneer migrants in the 1990s ranged from a low of 1,187 for Filipinos, to a high of 8,022 for Salvadorans. For specific labor markets the largest pioneer populations range from 74 for Koreans to 598 for Salvadorans. For no group did pioneers represent more than one percent of the group's national population in 2000 (Table 2, col. d). However, given that the population sizes of the 13 groups ranged from a high of almost 10 million for Mexicans to a low of just over 200,000 for Guyanese in 2000, this also means that while only one twentieth of one percent of Mexicans dispersed to unsettled places in 2000, that was a relatively large number (4,980; col c, Table 2), Salvadorans were the only group that dispersed more immigrants than Mexicans to unsettled areas in the 1990s – one percent of all Salvadorans or 8,022 migrants. It is also the case that most of the newly settled labor markets received only very small numbers of immigrants from one of the groups. For instance, the largest number of Cubans, Filipinos,

Koreans, and Guyanese that settled in new labor markets was only 79, 78, 74, and 84, respectively (col b, Table 2). The largest number of Mexicans and Salvadorans sent to a single newly settled labor markets was 587 and 598, respectively.

What are the characteristics of unsettled labor markets that attracted new settlers during the 1990s? To address that question we use zero-inflated Poisson (ZIP) count models which estimate Poisson-type models for which the dependent variable is a count of some event. While Poisson models are useful when there is a range of counts from zero to some not very large number and where there are many cases where the counts are small, in our sample, except for Mexicans, a large number of groups had no labor markets settled in 2000 and thus had a large number of zero counts. When the proportion of zero counts is high, such as it is for immigrant settlement in new destinations, Poisson models become inefficient. A predominance of zero counts reduces the impact of non-zero counts making it difficult to estimate coefficients and increasing standard errors (Long and Freese 2006). ZIP models overcome this problem by specifying a model for cases where the count is greater than zero and simultaneously estimating a logit (or probit) model of a unit's membership in the zero-count category. We use the ZIP model to estimate separate models for each immigrant group that are constrained to the set of labor markets that contained no member of a specific origin group in 1990. The ZIP models first estimate factors associated with net counts of new group settlers in newly settled labor markets during the 1990s and then estimate the factors associated with zero labor market counts in 2000.

In 1990 the number of "empty" labor markets ranged from 78 for Mexicans to 572 for Haitians. Fifty-eight of the empty Mexican labor markets were settled by 2000 and 101 of the empty Haitian labors markets were settled by that time (see Table 1). Large numbers of labor markets remained unsettled for all groups save Mexicans who had only 20 labor markets that were

empty in 1990 and were not settled by 2000. For other origins the number of unsettled labor markets (zero counts) in 2000 ranged from 45 for Filipinos to 445 for Haitians. The Vuong test was used to determine whether the ZIP models significantly improved model fit over a standard Poisson with no adjustment for large numbers of zero counts. The ZIP models did improve model fit for all groups though the improvement was least significant statistically for Mexicans as should be expected given their modest number of zero counts (20).

Measurement: The models include indicators of a small number of characteristics of labor markets that should distinguish places with regard to their attractiveness to immigrants. This set of labor market indicators includes distance between the destination and the nearest of a group's top five gateways, the 1990 population size, the average full time wage in 1990, the percent of the adult population that had college degrees in 1990, the percent change between 1990 and 2000 in the size of the employed population, the percent of the 1990 labor force in agriculture, the percent change in the size of the native-born population between 1990 and 2000, and several indicators of the presence of other immigrants and native-born persons of co-ethnic origins in 1990.

Gravity models usually show that as the distance separating origin and destination increases, the costs of migration increase (Lee 1966; Stouffer 1940). This pattern occurs because distance increases transport costs, reduces the ability to obtain good information (and check it out), and makes it difficult for people to draw support from those left behind. Distance effects should be especially strong for migrants to new destinations since we are examining settlement in places where no group members were present at the start of the decade. Given that this analysis focuses on the characteristics of places and not individuals, a variant of origin-destination distance is used, namely the distance between each place and the nearest of each group's top five gateways. While some immigrants who settled in new destinations in the 1990s may have moved shorter distances,

most will have come from places that had larger concentrations of compatriots. The distance from a major gateway to the destination, in any case, provides a good indication of the distance from origin group resources and is expected to be negatively related to the count of immigrants settling in a previously unoccupied area.

Since new immigrants to the United States strongly prefer large metropolitan places, as they disperse to other places within the United States there is no reason to assume that this preference for larger places disappears as immigrants undertake secondary migrations. To evaluate that possibility, the models include a measure of the size of each labor market in 1990. While non-immigrants also prefer places with larger populations, this preference should be stronger for immigrants. This pattern likely occurs because larger places are more likely to contain a range of group-specific social resources as well as other bilingual and institutional services and diverse employment markets than rural and relatively small places do. In addition, larger places can more easily absorb larger numbers of newcomers simply because the same number of newcomers constitutes a smaller percentage of the population.

Only a few studies have looked at how economic factors affect immigrants' internal migration decisions within the United States but those that have tend to show that immigrants moving internally seek economic opportunities just as the native born do (Frey and Liaw 2006; Gurak and Kritz 2000; Kritz et al. 2011). It is reasonable to expect that economic conditions will be particularly important for pioneer immigrants who move to new destinations because they will not be joining established compatriot communities. Three indicators of economic conditions in different labor markets are used to measure the importance of economic context. The first is the mean wage of persons who were employed full time in 1989 (measured in units of 1000 dollars). Places with a history of higher wages should be more attractive than ones with lower wages

although wage effects can be dampened because high wages may be limited to sectors that are not readily available to immigrants from a group with a particular skill profile. Furthermore, though economic place characteristics tend to be stable over time, conditions can change quickly in smaller labor markets (e.g. by the closing or opening of one or more major enterprises). The second measure is the percent of the adult population that completed four years of college. Labor markets differ considerably on this dimension which is closely associated with processes of differentiation of opportunity structures across places (Moretti 2012). Immigrant groups differ in their education profiles and, in turn, their skill levels and the types of local economies they are likely to seek when they migrate internally. Considerable attention has been given to the role of agricultural employment in the dispersion process. We therefore measure the relative size of agricultural sector employment. The literature, at least for low-skill groups, suggests that places with relatively more agricultural workers will attract pioneer settlers. On the other hand, migrants' preference for larger places suggests that other factors will have greater attraction to migrants. Finally we use an indicator of the extent of percent change in employed numbers in 1990 and 2000. The employment change indicator is based on the assumption that places with larger increases in employed populations are doing better economically and should be more attractive to new settlers.

Although immigrants have a very different settlement pattern than natives in that they are highly concentrated in a relatively small number of gateway areas, if they migrate internally they tend to be attracted to the same types of places that the native born are (Gurak and Kritz 2000; Kritz and Gurak 2001). While the economic context indicators tap the types of contexts that may be attractive to both natives and immigrants, labor markets differ in subtler ways than can be captured with these indicators. Consequently, a measure is included that assesses whether native-

born persons were also moving to a given destination, namely the percent change in the size of the native-born population. While Donato and colleagues (2007) found that some immigrants are migrating to destinations that the native born are leaving, we doubt that this is common for most immigrants who migrate internally.

Since the ZIP models are estimated just for each group's set of labor markets where no group members were counted in the 1990 Census, the presence of compatriots could not have been a factor that attracted pioneer immigrants to unsettled areas. Thus, while some group presence could have become established during the 1990s and been a factor for some immigrants settling toward the end of the decade, the presence of co-ethnics could not have exercised the same gravitational attraction throughout the decade as larger settlement centers would have done.[4] It is possible, however, that pioneer immigrants moving to new places may be following spatial dispersion patterns established by immigrants from other origins. Smaller immigrant groups, in particular, may be likely to follow the lead of larger ones. Underlying mechanisms for this process could involve pan-ethnic network links between immigrants from different origins but this need not be the case. Just as immigrants may be attracted to the same type of places as natives are because they become aware of economic opportunities in those areas, they may also be attracted for similar reasons to places where other immigrants are already established. While pan-ethnic network links might be a factor for such flows, this pattern could also evolve because immigrants who have been in the country longer pick up information about opportunities, climate, and other context conditions from other sources.

[4] Most pioneer settlers were either immigrants who settled in the pioneer locations between 1990 and 1995 or migrated internally since 1995. For only two groups, Mexicans and Colombians, were recent immigrants more numerous than internal migrants and the differences were small: 37% to 34% for Mexicans and 31% to 27% for Colombians. Each of the other 11 groups internal migrants outnumbered recent immigrants by wide margins (from 8 percentage points for Indians to over 25 points for Filipinos (see Table 4).

In order to examine the extent of a broader foreign-born and co-ethnic presence in locations that attract pioneer immigrants, the models include three indicators that control for each labor market's foreign-born and ancestry composition, and one measure that indicates the extent to which a labor market was a pioneer destination for other groups in the 1990s. The first measure is the size of the total foreign-born population of each labor market in 1990. This measure by definition excludes immigrants from the index group given that the model is limited to labor markets where no group members were settled in 1990. The second measure is the number of foreign born from a group's pan-ethnic origin (Hispanic, Asian, and Black) residing in the labor market in 1990. These two measures effectively partition a labor market's 1990 immigrant population between those of the same pan-ethnic origin and all other immigrants. For Mexicans, Cubans, Salvadorans, Dominicans and Colombians, the second measure is a count of foreign-born persons who indicated that they were Hispanic on the census Hispanic identity question. For the five Asian groups, the second measure is a count of foreign-born persons who indicated they were Asian on the census ancestry question. For the three Caribbean groups the measure is a count of foreign-born persons present in a labor market in 1990 who indicated they were Black on the census race question. Given this measurement, it is important to keep in mind that the co-ethnic populations change for immigrants from each region. For Filipinos, for instance, since the second measure counts all non-Filipino Asians, the first foreign-born measure captures the presence of non-Asian foreign born in a given labor market. For the Latino models, in contrast, the first measure captures the presence of non-Hispanic foreign born and the second one specifies the count of Hispanic foreign born. The third measure looks at the number of native-born persons from a group's pan-ethnic origin who resided in a labor market in 1990. Labor market populations were classified using the same definitions described above for classifying the foreign born. However,

the ancestry measure could include persons from the same national origins who were descendants of earlier immigrants. Second and higher generation ancestors were more likely to be present for Mexicans and Filipinos because they have longer U.S. histories than the other groups but the native born could also be from other origins. The fourth measure in this set is a count of the number of groups, among the 13 studied in this analysis, that experienced initial, or pioneer, settlement of a labor market during the 1990s.

The covariates for the second component of the model, which predicts simultaneously the correlates of no settlement during the 1990s or the zero-count areas, can be the same or differ from those employed in the ZIP Poisson estimation of the count outcome. The expectation would be that factors that are positively associated with higher new settlement counts will be negatively associated with the failure to attract new settlers. However the failure to attract new settlements could also be due to a lack of knowledge of opportunities and amenities of such places and, therefore, we not only use the same eleven indicators described above for both sets of models but add four other measures to the zero-count model in order to explore additional factors that might underlie non-group settlement: percent of adults with less than high school degree, percent of labor force in agricultural occupations, average housing rent in 1990, and percent of the labor market that consisted of native-born whites. Given that the set of places that received no group members is large and diverse, except for Mexicans, we have less confidence in our ability to predict this status than we do to predict the places that did attract group members.

Poisson ZIP Model Findings

Table 3 shows the results for the Poisson ZIP models[5]. The top panel has coefficients which specify the relationship between labor market characteristics and pioneer settlement counts in areas that each group settled during the 1990s. The bottom panel has logit coefficients which specify the characteristics of labor markets where immigrants did not settle during the 1990s. All thirteen group models were significant at the .001 level and the Vuong tests, which evaluates whether the Poisson ZIP models were a better fit for each group than the standard Poisson models (bottom 2 rows of Table 3), are significant at the .001 level except for Mexicans (that model is significantly different at the .05 level). While the top panel shows that all of the labor market characteristics examined are significant for most groups, there are several unexpected differences in the direction of the relationships on selected indicators.

Distance of the destination from one of a group's top five group gateways was, as expected, negatively related to group settlement for eight groups, but for three groups the effect of distance was significant and positive (Mexicans, Colombians and Guyanese) and for two (Filipinos and Vietnamese) the estimated coefficient was not significant. The positive relationship for Mexicans makes sense given the high degree of dispersion of Mexicans by 1990. The potential destinations for the continued dispersion during the 1990s would have to be located at large distances from major Mexican gateways. Given few options of labor markets relatively close to gateways, other factors may have trumped distance. A similar argument may explain the lack of significance of the distance coefficient of Filipinos, but it would fit the situation of Colombians and Vietnamese less well, and Guyanese not at all. Thus, while the major effect of distance is to discourage pioneer

[5] Because of the skewed distributions of the raw variables, the natural log of wage, distance and all count/size variables, except for the dependent variable, are used in estimating the ZIP model.

settlement, the situations of diverse origin groups can create situations in which the discouraging effects of distance are overcome. Distance from immigrants' principal settlement is a dimension of the migration process that has been known to be important since the early work on migration (Lee 1966; Stouffer 1940) but has not been included in most recent studies of the immigrant settlement process. Given the marked differences across groups in initial settlement locations, the findings for distance suggest that a complex pattern of regional intergroup settlement may be evolving in a manner similar to that observed for European immigrants in the previous century (Lieberson 1963; Lieberson and Waters 1987).

The analysis provides strong support for the idea that immigrants moving to new destinations continue to prefer places with larger populations relative to the set of available destinations. All else equal, pioneers from 10 groups chose places that had larger populations at the beginning of the decade (Table 3). Given that New York and Los Angeles were one of the top 5 gateways for all the groups, the newly settled places would have had smaller population but still have been large enough to offer immigrants diverse economic and cultural institutions. Population size, however, was not significant for Cubans and was negatively related to pioneer settlement for Jamaicans and Guyanese. All three immigrant groups are highly concentrated in large metropolitan gateways indicating that the empirical outcome does not indicate a strong underlying preference for smaller places. Furthermore, the apparent lack of preference for larger places is not an artifact of constrained opportunities since these groups had large sets of unsettled labor markets from which to select new destinations. The lack of a significant positive size effect for these two groups must, for the moment, be interpreted as indicating that other factors, including those in the model, counteract a general preference for places with larger populations.

Table 3 shows that labor market economic characteristics are linked to the numbers of new settlers a place attracts but most of the relationships are less consistent than for distance and population size and the direction of many of the relationships is unexpected. In general, labor markets with higher wages did attract larger numbers of new settlers – that pattern occurred for seven of the thirteen groups. But for five others (Mexicans, Salvadorans, Colombians, Jamaicans AND Haitians) the relationship was negative and significant; and no significant effect was found for Dominicans. While these findings constitute reasonably strong support for the expected pull of higher wages, ultimately in order to assess wage effects it would be necessary to examine indicators of wages in specific sectors where immigrants from different origins are employed. The negative wage effects could occur because migrants selected destinations that had unspecified attractive characteristics that just happen to be associated with lower overall wage levels. It is also possible that low-skill pioneers moved to lower wage areas because they sought low-wage positions if not low wages. Mexicans, Salvadorans, Haitians and Jamaicans do have relatively low education levels and it is possible that their lack of attraction to high-wage areas is due to the fact that the positions they seek tend not to offer higher wages and can be present in places that may not also have relatively high levels of high-wage positions. Colombians, on the other hand, have a significantly higher level of educational attainment and are likely to be seeking jobs in higher paying sectors. Their dispersal pattern is quite distinct from those of other Latinos and this may contribute to the selection of places that can be characterized as lower wage areas.

Labor markets with higher percentages college educated arguably have more dynamic economic contexts and may also be attractive destinations due to the impact of higher concentrations of well-educated citizens on governance, cultural and other institutions (Moretti 2012). That expectation receives strong support in this study. The effect of higher levels of college

educated persons on the level of pioneer settlement is significantly positive for nine groups and negative for only one (Guyanese). The nine groups with positive associations are a very diverse set that includes groups with low-education profiles (Mexicans, Dominicans, Salvadorans, Jamaicans and Haitians), groups with high education profiles (Chinese and Filipinos), and groups with mid-level profiles (Colombians and Vietnamese). This suggests that the relationship is not produced by a fit between group profiles and educational levels of an area, but rather by what higher levels of educational attainment mean for the vitality of a labor market.

Several studies have found that relative change in the size of the employed population is positively associated with the retention of immigrants (Gurak and Kritz 2000; Kritz and Gurak 2001) and with the selection of destinations (Kritz and Gurak 2012). For Salvadorans and Vietnamese the estimated coefficients were positive and significant but for eight other groups, they were negative and significant (Mexicans, Dominicans, Colombians, Indians, Chinese, Koreans, Jamaicans and Guyanese). This unexpected pattern may be due in part to the association between employment growth and other factors in the models. For example, in reduced form models that examined employment growth alone or that just included labor market size and distance (not shown), employment growth is positively associated with higher counts for Dominicans, Colombians and Koreans. In the reduced models the estimated coefficients for employment growth are negative for Mexicans, Cubans and Jamaicans, however, so the results in the full models cannot be discounted as being due solely to model complexity. It appears that employment growth is associated with processes not measured in the analytical model and that these processes impact origin groups differently.

Areas with higher proportions of their labor forces working in the agricultural sector did not attract pioneer settlers in the 1990s. The estimated coefficients of eleven groups are negative

and significant. Only for Filipinos is this factor positive and significant and this is likely due to their higher presence in high-skilled occupations such as nurses and other health practitioners and the fact that health clinics in more disadvantaged regions provide special incentives to immigrant professional to meet staffing needs. Filipinos have almost no presence in the agricultural sector outside of Hawaii. While recruiting for immigrant labor in rural areas with significant agricultural and food processing activity is clearly part of the immigrant settlement process, it was not an important part of the process of initial settlement process of the 1990s. This holds even for groups such as Mexicans and Salvadorans which do have relatively high proportions working in the agriculture sector nationally.

Clearly the economic context of potential pioneer destinations is relevant to the number of new settlers counted in the 2000 Census. The general tendency for higher wage places to attract pioneer settlers is consistent with expectations, thought the negative association found for some groups indicates that more is going one than the movement of migrants to places with higher wages. Measures of wages by type of employment may provide a more nuanced picture. The findings for percent of the labor force in agriculture and the percent of adults with college education suggest that pioneers have been attracted by contexts that might be characterized as dynamic or upscale (Moretti 2012:4). It is clear for all groups that some economic factors are important albeit not always in the manner theory predicts. In order to capture other attractive labor market factors that may influence immigrants' settlement decisions, we used a proxy indicator, namely the percent change of native-born population in the 1990s. The results for that measure provide fairly strong support for the expectation that immigrants did tend to settle in places that were also attractive to the native born. For eight groups there is a positive and significant relationship between pioneer settlement and change in the size of the native-born population in

those labor markets. For two groups, however, the relationship was negative and significant. Fewer Filipinos and Vietnamese moved to pioneer destinations characterized by growth in the native-born population. This may reflect a willingness of immigrants from these groups, perhaps due to the types of occupations sought or to a history of refugee settlement, to settle in places seen as less attractive by natives and many other immigrants. Many Filipinos, for instance, arrive as nurses or other health workers to work in satellite health clinics in non-metropolitan areas. Other Filipinos arrive as mail-order brides to marry men living in non-metropolitan areas. A key reason why they are recruited to go to those areas is because there are insufficient native health workers and single women. Most Vietnamese, on the other hand, arrived as refugees and were resettled by refugee agencies in communities throughout the country. Although growing numbers of them have left those parts, others have remained in scattered communities throughout the country that could serve as attraction nodes.

The ZIP Poisson results in the top panel provide strong support for the expectation that there are links between pioneer settlement and established settlement patterns of immigrants from other origins and co-ethnic ancestors but they also show that ethnic composition works in quite distinct ways for immigrants from different national origins.

Each of the Hispanic groups has a distinct pattern. Mexican immigrants, for instance, who settled empty destinations in the 1990s, were strongly attracted by the presence of Hispanic foreign born from other Latin American origins, but not to labor markets with lower counts of non-Hispanic foreign born. Cubans, on the other hand, were attracted to places with larger counts of foreign-born settlers from non-Hispanic origins as well as by places with larger counts of Hispanic foreign born, but not to places with larger numbers of native-born Hispanics. The Salvadoran pattern is similar to that of Mexicans in that they tended not to settle in places that had larger

populations of Hispanic foreign born and to settle in places with larger populations of Hispanic foreign born. They differed from Mexicans in that they stayed away from areas that had larger populations of native-born Hispanics. All four non-Mexican Hispanic groups tended not to settle in places with larger native-born Hispanic populations,[6] while the coefficient for Mexicans is positive but insignificant. The Dominican pattern is the same as that of Salvadorans: avoidance of places with larger non-Hispanic foreign-born and native-born Hispanic populations, and attraction to places with larger numbers of other foreign-born Hispanics. Colombian also tended to pioneer in places where foreign-born Hispanics were present in higher numbers in 1990 and not to settle in labor markets that had larger populations of native-born Hispanics. Unlike Dominicans, however, they showed no avoidance (insignificant) of labor markets with larger population of non-Hispanic foreign born.

The findings for Asians are equally heterogeneous. Indians, Chinese, and Vietnamese were less likely to settle in places that had larger numbers of non-Asian foreign born, but liked places that had more other Asian foreign born. However, while there was no relationship between pioneer settlement and the presence of larger numbers of native-born Asians for the Chinese, this relationship was negative and significant for both Indians and Vietnamese. Unlike, the Chinese, Indians and Vietnamese, Filipinos and Koreans both tended to settle in places that had larger numbers of non-Asian foreign born, and for both the relationship between settlement and the presence of native-born Asians was insignificant. Koreans, however, were like the other three Asian groups in that they tended to settle where there were larger numbers of other Asian foreign

[6] The apparent avoidance of places with larger populations of native-born Hispanics by all non-Mexican Hispanic groups probably reflects the dominance of Mexicans in the native-born category and the distance and isolation of labor markets with these populations from most of the settlement areas of other Hispanic, especially Dominican, Cuban and Colombian, immigrant groups. In simpler models, the native-born Hispanic coefficient was positive and significant.

born. Filipinos stood out among the Asian groups in that they did not settle in places that had larger Asian populations in 1990.

The fact that there is any similarity between the Indian and Vietnamese patterns is surprising given that these two groups differ markedly in terms of immigration histories and human capital profiles and this usually encourages the expectation of differences in settlement dynamics. Filipinos provide a distinct contrast. Only the presence of larger non-Asian foreign-born populations was positively linked to Filipino pioneer settlement in the 1990s. While both Chinese and Korean immigrants did tend to settle in labor markets that had larger populations of other Asian foreign born in 1990, only the Koreans were drawn to places that had larger populations of non-Asian foreign born. The pioneer destinations of these two groups clearly differed. There is no support for a pan-Asian multi-generation linkage. None of the Asian groups had a positive association of settlement counts and the presence of larger native-born Asian populations and two of the groups had significant negative associations.

Immigrants from the three Caribbean origins differed only slightly in their responses to ethnic composition. All three settled in destinations that were already occupied by native-born Blacks or other foreign born, suggesting that their destinations were strongly and consistently shaped by race and that labor markets with larger Black populations also had larger immigrant populations. The differences emerge in their responses to the presence of other foreign-born Blacks. Guyanese immigrants did settle in places that had larger populations of non-Guyanese foreign-born Blacks, but Haitians did not. The largest Black foreign-born immigrant populations are from Anglophone origins such as Nigeria and Jamaica and this may contribute to the negative attraction of such populations for Haitians and the positive attraction noted for Guyanese. At first, the lack of an association for Jamaicans appears difficult to explain but it may be due to relative

group size. Jamaicans and Haitians are the largest immigrant groups from predominantly Black origin countries and they do not share a common language. While Guyanese share the use of English with Jamaicans, they constitute a much smaller immigrant population and they are far less dispersed than Jamaicans and thus less likely to have preceded Jamaicans to potential new destinations.

Pioneer settlement is clearly influenced by prior settlement of immigrants from different origins and, in what might be considered a counter intuitive way, by the distribution of native-born persons of similar ancestries. While not all groups are attracted to the same types of ethnic contexts, there is a strong tendency for pioneer settlement to be more pronounced in labor markets that had been settled in 1990s by immigrants from similar origins. This pattern holds for 10 of the 13 groups studied in this analysis with only Haitians having a significant negative association. Another way that the settlement process could be influenced involves the processing of information about where others were settling during the 1990s. We ask whether immigrants from a given origin were more likely to settle in labor markets that were being settled by immigrants from other origins. Each labor market is characterized by a count of the number of origin groups (0 to 13) who initially settled a place. The greater the number of origin groups pioneering a labor market the greater the presumptive pull of otherwise unmeasured factors.[7] Five groups (Mexicans, Cubans, Dominicans, Koreans and Haitians) were more likely to settle in labor markets that had higher numbers of other origin groups pioneering them. However, three groups (Salvadorans, Vietnamese and Jamaicans) tended not to settle in such popular places and there was no significant

[7] The inclusion of the labor market count of pioneer settlements had only trivial impact on other coefficients. The only change affecting interpretation of findings was for the effect of the count of native-born Hispanics in a labor market in 1990 for Mexicans: a significant positive coefficient became insignificant.

relationship for five groups. There is no clear pattern to this set of outcomes but among the five Asian groups only Koreans were more likely to be settling popular pioneer destinations.

Zero Count Labor Market Results

The bottom panel in Table 3 shows the results for the zero-inflated part of the ZIP estimation procedure and yields only a little additional information. The importance of the preference for larger places is underlined once again. The larger the 1990 total population of a labor market, the less likely it was to remain empty in 2000. This was so for 11 of the 13 groups with Mexicans and Haitians being the exceptions. Mexicans had settled in all but 78 of the 741 labor markets by 1990 and only 20 of these 78 remained unsettled in 2000, which greatly weakened the power of the logit model to identify characteristics associated with those 20 places. Although the Vuong test of model significance using ZIP in place of the Poisson was significant for Mexicans, because of the small number of cases with zero counts in 2000, the ZIP model made less of a difference from the standard Poisson model for Mexicans than for the other groups. The range of 1990 population sizes for Mexicans may have been more limited for this small set of 20 labor markets. This logic is not relevant for Haitians since 445 labor markets still had no Haitians present in 2000. Haitians were at a very early stage of the dispersion process in the 1990s and may have had very little information about the nature of most of their unsettled places.

No other place characteristic approached population size in having a consistent association with remaining unsettled. This gives the impression that there is an element of randomness in the process by which a labor market leaves the unsettled category for a particular group. Nevertheless, both distance and ethnic composition proved important for several origin groups. Distance from a top-5 gateway was positively related to remaining unsettled for four groups: Dominicans, Chinese, Jamaicans, and Haitians. Three of these (Dominicans Jamaicans and Haitians) share the traits of

being highly concentrated in their top settlement places and having high proportions with African heritages, which suggests that race played a part in the high concentration, a form of segregation, of these groups. That factor, in turn, could increase the salience of distance. Those three groups also have lower socio-economic profiles but it is not clear how that factor affects zero outcomes given that Chinese do not have a low socio-economic profile. None of the other Asian groups have this positive link between distance and zero settlement. Having a larger foreign-born population in 1990 is negatively related to remaining unsettled for four groups (Mexicans, Dominicans, Colombians and Haitians), however this factor has a positive association for Salvadorans and Cubans. This inconsistency hinders any effort at explanation. Having larger numbers of foreign-born from similar origin is negatively related to remaining unsettled for three quite distinct groups: Salvadorans, Chinese and Guyanese.

Summing Up

Based on our analysis thus far, the findings suggest a story in which immigrant settlement during the 1990s to new destinations was highly structured in ways that differed across origins. The moves to empty destinations that had no origin group members present in 1990 tended to be to relatively close places that had large populations and higher average wages. They also tended to be to places that had higher percentages of college educated, lower percentages in agricultural occupations, and that were attracting native-born settlers. Alongside these general processes the prior settlement of other groups with potential co-ethnic linkages to each origin group influenced settlement in a variety of ways. The presence in 1990 of foreign born from close ethnic origins generally served to attract settlers to new destinations. In addition, the presence of foreign-born from other origins attracted immigrants from some origins but was of no importance for others and had a negative impact for some. Other than for Caribbean and Mexican immigrants, the presence

of native-born from similar or same ancestries did not attract settlers. Certainly there is more to learn about why these earlier settlements have different effects for specific immigrant groups, but it is also certain that settlement into labor markets that were empty of a specific origin group is influenced to a degree by the prior settlement of others.

References

Bartel, A.P.and M.J. Koch. 1991. "Internal Migration of US Immigrants." Pp. 121-134 in *Immigration, Trade, and the Labor Market*, edited by J.M. Abowd and R.B. Freeman. Chicago: The University of Chicago Press.

Denton, N.A.and D.S. Massey. 1988. "Residential Segregation of Blacks, Hispanics, and Asians by Socioleconomic Status and Generation." *Social Science Quarterly* 69:797-817.

Donato, K.M., C.M. Tolbert, A. Nucci, and Y. Kawano. 2007. "Recent Immigrant Settlement in the Nonmetropolitan United States: Evidence from Internal Census Data." *Rural Sociology* 72(4):537-559.

Fischer, M.J.and M. Tienda. 2006. "Redrawing Spatial Color Lines: Hispanic Metropolitan Dispersal, Segregation, and Economic Opportunity." Pp. 100-131 in *Hispanics and the Future of America*, edited by M. Tienda and F. Mitchell. Washington, D.C.: National Academies Press.

Frey, W.H.and K.-L. Liaw. 1999. "Internal Migration of Foreign-born Latinos and Asians: Are They Assimilating Geographically?" Pp. 212-230 in *Migration and Restructuring in the United States*, edited by K. Pandit and S.D. Withers. New York: Rowman and Littlefield.

Frey, W.H.and K.L. Liaw. 2006. "Migration within the United States: Role of Race-Ethnicity." Pp. 207-260. Washington, D.C.: Brookings Institution Metropolitan Policy Program.

Funkhouser, E. 2000. "Changes in the Geographic Concentration and Location of Residence of Immigrants." *International Migration Review* 34(2):489-510.

Goździak, E.M.and S.F. Martin. 2005. "Beyond the Gateway: Immigrants in a Changing America." New York: Lexington Books.

Gurak, D.T.and F. Caces. 1992. "Migration Networks and the Shaping of Migration Systems." Pp. 150-176 in *International Migration Systems*, edited by M. Kritz, L.L. Lim, and H. Zlotnik. Oxford: Clarendon.

Gurak, D.T.and M.M. Kritz. 2000. "The Interstate Migration of U.S. Immigrants: Individual and Contextual Determinants." *Social Forces* 78(3 March):1017-1039.

Kandel, W.and E.A. Parrado. 2005. "Restructuring of the U.S. Meat Processing Industry and New Hispanic Migrant Destinations." *Population and Development Review* 31(3):447-471.

Kritz, M.M.and D.T. Gurak. 2001. "The Impact of Immigration on the Internal Migration of Natives and Immigrants." *Demography* 38(1 February):133-145.

Kritz, M.M.and D.T. Gurak. 2012. "Immigration Dispersion: Who's Moving to New Destinations and Why?" in *Annual Meeting of the Population Association of America*. San Francisco.

Kritz, M.M.D.T. Gurakand M.A. Lee. 2011. "Will They Stay? Foreign-Born Out-Migration from New U.S. Destinations." *Population Research and Policy Review* 30:537-567.

Kritz, M.M.and J.M. Nogle. 1994. "Nativity Concentration and Internal Migration Among the Foreign-Born." *Demography* 31(3):509-524.

Lee, E. 1966. "A Theory of Migration." *Demography* 3(1):47-57.

Lieberson, S. 1963. *Ethnic Patterns in American Cities*. New York: Free Press.

Lieberson, S.and M. Waters. 1987. "The Location of Ethnic and Racial Groups in the United States." *Sociological Forum* 2:780-810.

Long, J.S.and J. Freese. 2006. *Regression Models for Categorical Dependent Variables Using Stata*. College Station: Stata Press.

Marrow, H.B. 2011. *New Destination Dreaming: Immigration, Race, and Legal Status in the Rural American South*. Stanford: Stanford University Press.

Massey, D.S. 1990. "The Social and Economic Origins of Immigration." *Annals of the American Academy of Political and Social Science* 510:60-72.

Massey, D.S. 2008. "New Faces in New Places: The Changing Geography of American Immigration." New York: Russell Sage Foundation.

Massey, D.S., R. Alarcon, J. Durand, and H. Gonzales. 1987. *Return to Aztlan: The Social Process of International Migration from Western Mexico*. Berkeley, CA: University of California Press.

Massey, D.S.and N.A. Denton. 1987. "Trends in the Residential Segregation of Blacks, Hispanics, and Asians: 1970-1980." *American Sociological Review* 1987:802-825.

Massey, D.S.and M. Sánchez. 2009. "Restrictive Immigration Policies and Latino Immigrant Identity in the United States." in *Human Development Research Papers*. New York: United Nations Development Programme.

Moretti, E. 2012. *The New Geography of Jobs*. Boston: Houghton Mifflin Harcourt.

Odem, M.E.and E.C. Lacy. 2009. "Latino Immigrants and the Transformations of the U.S. South." Athens: University of Georgia Press.

Parrado, E.A.and W. Kandel. 2008. "New Hispanic Migrant Destinations: A Tale of Two Industries." Pp. 99-123 in *New Faces in New Places: The Changing Geography of American Immigration*, edited by D.S. Massey. New York: Russell Sage Foundation.

Scopilliti, M.and J. Iceland. 2008. "Residential Patterns of Black Immigrants and Native-Born Blacks in the United States." *Social Science Quarterly* 89:547-572.

Singer, A. 2004. "The Rise of New Immigrant Gateways." in *Brookings Institution Living Cities Census Series*. Washington, D.C.: Brookings Institution.

Singer, A.S.W. Hardwickand C.B. Brettell. 2008. "Twenty-First Century Gateways: Immigrant Incorporation in Suburban America." in *James A. Johnson Metro Series*. Washington, D.C.: Brookings Institution.

Stouffer, S.A. 1940. "Intervening Opportunities: A Theory Relating Mobility and Distance." *American Sociological Review* 5:845-867.

Tolbert, C.M.T.C. Blanchardand M.D. Irwin. 2006. "Stability and Change in Individual Determinants of Migration: Evidence from 1985-90 and 1995-2000." Pp. 31 in *Discussion Papers, Center for Economic Studies*, edited by S.V. Nguyen. Washington, DC: U.S. Bureau of the Census.

Tolbert, C.M.and M. Sizer. 1996. "U.S. Commuting Zones and Labor Market Areas: A 1990 Update." in *ERS Staff Paper Number 9614*. Washington, D.C.: Economic Research Service, Rural Economy Division, U.S. Department of Agriculture.

Figure 1: Percent of Labor Markets Settled in 1990 and 2000, by National Origin

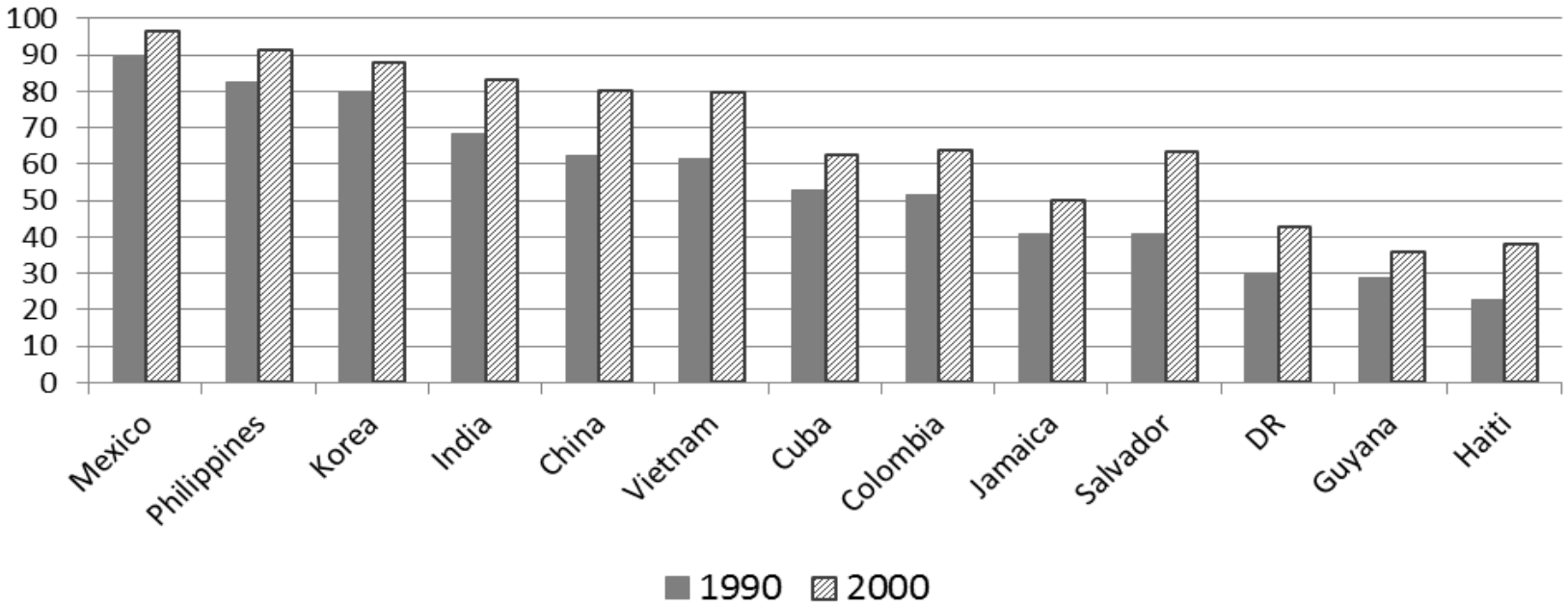

Table 1: Indicators of Labor Market (LM) Dispersion in 1990 and 2000[a]

	% of 741 LMs Settled in 1990	% of 741 LMs Settled in 2000	N LMs Empty in 1990	N LMs Newly Settled by 2000	N LMs Still Not Settled by 2000	N LMs with Fewer of Group in 2000	N LMs Group Occupied in 1990 and not in 2000	N LMs with Group Growth, 1990 to 2000
	[a]	[b]	[c]	[d]	[e]	[f]	[g]	[h]
Mexico	89.5	96.6	78	58	20	36	5	682
Cuba	52.9	62.8	349	121	228	136	48	373
Colombia	51.4	63.7	360	146	214	103	55	412
Salvador	40.8	63.3	439	194	245	52	27	439
DR	29.7	42.6	521	139	382	79	43	277
Philippines	82.6	91.4	129	84	45	109	19	581
Korea	80.2	88.1	147	88	59	123	29	553
India	68.3	83.3	235	134	101	101	23	536
China	62.3	80.4	279	157	122	84	23	530
Vietnam	61.7	79.6	284	133	151	102	25	484
Jamaica	40.9	49.9	438	101	337	89	34	313
Guyana	28.9	36.0	527	101	426	93	48	218
Haiti	22.8	38.2	572	127	445	45	13	246

[a] Sources: Confidential long-form files of the 1990 and 2000 Decennial Censuses.

Table 2: Population Characteristics of Pioneer Labor Markets (LMs) in 1990s, by National Origin[a]

	Total National Population, 1990	Largest Number of Group Members Who Settled in a Single Pioneer LM, 2000	Total Number of Group Members Who Settled in All Pioneer LMs, 2000	% of Group's National Population in Newly Settled LMs, 2000	Total National Population, 2000
	[a]	[b]	[c]	[d]	[e]
Mexico	4,262,900	587	4,980	0.05	9,960,000
Philippines	914,419	78	1,187	0.09	1,318,889
Cuba	737,934	79	1,459	0.17	858,235
China	680,233	164	3,481	0.29	1,200,345
Korea	564,355	74	1,278	0.15	852,000
Vietnam	538,604	389	3,308	0.34	972,941
Salvador	465,289	598	8,022	0.99	810,303
India	454,893	181	3,309	0.33	1,002,727
DR	344,046	203	2,212	0.33	670,303
Jamaica	332,427	106	1,321	0.24	550,417
Colombia	286,530	138	2,065	0.41	503,659
Haiti	221,470	128	2,159	0.52	415,192
Guyana	119,341	84	1,291	0.62	208,226

[a] Sources: Confidential long-form files of the 1990 and 2000 Decennial Censuses.

Table 3: Zero-inflated Poisson Model of Settlement Counts in 2000 in Labor Markets (LMs) that had No Same National Origin Group Members in 1990[a], by National Origin

	Mexico	Cuba	El Salvador	DR	Colombia	Philip-pines	China	India	Vietnam	Korea	Jamaica	Haiti	Guyana
A. ZIP count model of pioneer settlers													
Distance from group's nearest top 5 gateway[b]	0.214***	[-0.117]	-0.408***	-0.214***	[0.109]	0.255	-0.322***	-0.214***	0.024	-0.555***	-0.257***	-0.381***	[0.082]
Total population of labor market in 1990 [b]	0.844***	0.067	0.840***	0.855***	0.706***	0.650***	0.719***	0.620***	0.143**	0.133*	-0.211**	0.289***	-0.167*
Mean wage of full-time workers in 1990 [b]	-0.317*	[0.464]	-2.715***	0.190	-0.997***	[0.320]	0.343*	0.509***	[0.227]	0.679***	-1.469***	-0.561*	1.627***
% of adult population with college degrees	[0.007]	-0.002	0.073***	0.017**	0.031***	[0.012]	0.011*	0.005	0.012**	0.003	0.020**	0.019***	-0.042***
% change of employed labor force, 1990 to 2000	-0.004***	-0.002	0.011***	-0.018***	-0.011***	0.003	-0.009***	-0.004**	0.111***	-0.011***	-0.009**	0.005	[-0.008]
% of labor force in Agriculture	-0.129***	-0.042***	-0.008**	-0.028**	0.026***	-0.012*	0.014***	0.012***	-0.011**	0.018***	-0.022**	-0.013	[-0.016]
% change of native-born population, 1990 to 2000	0.000	0.000	0.000	-0.039***	-0.022***	-0.014***	0.017***	0.007***	-0.014***	0.016***	0.010*	0.018***	0.025***
Total foreign-born population in 1990 [b]	-0.771***	0.146**	-0.768***	-0.459***	0.029	0.159***	0.107***	-0.051*	-0.083**	0.094*	0.330***	-0.267***	0.182***
Total foreign-born co-ethnics in 1990 [b, c]	0.331***	-0.166***	-0.539***	-0.491***	-0.203***	0.016	0.121***	-0.161***	-0.391***	0.228***	0.002	-0.135***	0.156***
Total native-born co-ethnics in 1990 [b, d]	0.009	-0.081***	-0.039***	-0.203***	-0.140***	0.002	0.009	-0.027***	-0.173***	0.004	-0.180***	-0.169***	0.072***
N groups first settled CZ in 90s	0.109***	0.043*	-0.045***	0.045*	-0.020	-0.005	0.003	-0.000	-0.048***	0.052*	-0.089***	0.037*	-0.028
B. Zip inflated model: logit of zero count labor markets													
Distance from group's nearest top 5 gateway[b]	3.014	0.461	-0.079	-0.966***	0.449	0.068	-1.060*	0.464	-0.081	-1.358	-0.732*	-1.271***	0.314
Total population of labor market in 1990 [b]	-1.273	0.789*	-1.233***	-1.092***	-0.931***	-1.596***	-1.112***	-1.355***	-1.561***	0.927*	0.995**	0.265	0.964*
Mean wage of full-time workers in 1990 [b]	-0.446	2.380*	1.502	-1.438	0.586	0.094	-0.632	1.491	1.461	-0.124	-0.398	1.660	-0.062
% of adult population with college degrees	-0.038	0.032	0.022	-0.042	0.019	-0.025	-0.024	0.030	0.021	-0.048	-0.040	-0.035	0.041

% change of employed labor force, 1990 to 2000	-0..42	-0.004	[0.017]	-0.009	0.007	0.011	-0.011	0.005	-0.010	-0.018	[-0.025]*	-0.015	-0.003
% of labor force in Agriculture	0.031	0.011	-0.007	0.038	-0.002	0.005	-0.011	0.028	0.003	-0.017	0.022	-0.015	0.024
% change of native-born population, 1990 to 2000	-0.005	-0.015	-0.038**	0.000	0.025	-0.019	0.002	0.002	-0.000	-0.011	0.022	-0.008	-0.011
Total foreign-born population in 1990b	-1.092	-0.270	0.765**	[-0.587]	-0.807**	0.561	0.237	0.009	0.192	0.642*	-0.132	-0.287	0.100
Total foreign-born co-ethnics in 1990 [b, c]	0.241	0.045	-.628***	0.059	0.221	0.193	-0.493*	-0.085	0.045	0.307	-0.175	-0.054	-0.323**
Total native-born co-ethnics in 1990 [b, d]	0.299	-0.031	0.048	0.046	0.080	-0.193	[-0.148]	-0.127	-0.017	-0.189	-0.020	-0.010	0.006
N groups first settled CZ in 90s	0.646	0.256*	0.033	-0.004	0.086	-0.096	[-0.229]	-0.026	-0.095	0.441*	-0.076	0.094	-0.003
% of adults with less than high school degree	-0.085	-0.008	0.015	-0.015	[0.037]	0.043	0.025	0.017	0.033	-0.011	0.015	0.060*	0.023
Average housing rent in 1990	0.006	-0.001	-0.006**	0.002	-0.001	0.003	-0.002	-0.002	-0.006**	[-0.011]	-0.003	0.001	-0.002
Native-born White Percent of LM Population	0.045	0.007	0.002	0.005	0.007	0.047***	0.022*	0.011	0.009	0.021	0.009	0.002	0.016
N LMs empty in 1990	78	349	439	521	360	129	279	235	284	147	438	572	527
N LMs newly settled in 2000	58	121	194	139	146	84	157	134	133	88	101	127	101
Model Significance	***	***	***	***	***	***	***	***	***	***	***	***	***
Vuong Test of model with standard Poisson model	**	***	***	***	***	***	***	***	***	***	***	***	***

[a] Statistical signicance is indicated by asterisks (* signifies .05, ** signifies .01, and *** signifies .001) and square brackets which signify significance at the .10 level.

[b] Along with the distance and wage variables all independent variables that are counts have been logged (natural log)

[c] For Mexicans, Cubans, Salvadorans, Dominicans and Colombians this is the count of foreign-born Hispanics in LM in 1990. For Asian-origin groups it is the count of foreign-born persons of Asian ancestry. For Jamaicans, Haitians and Guyanese it is the count of foreign-born Blacks in 1990.

[d] For Mexicans, Cubans, Salvadorans, Dominicans and Colombians this is the count of native-born Hispanics in LM in 1990. For Asian-origin groups it is the count of native-born persons of Asian ancestry. For Jamaicans, Haitians and Guyanese it is the count of native-born Blacks in 1990.

Table 4: Migration Status of Immigrants in Pioneer Labor Markets in 2000: Percent Early Arrival, Internal Migrants, and Recent Immigrants, by Origin

	Mexico	Cuba	El Salvador	DR	Colombia	Philip-pines	China	India	Vietnam	Korea	Jamaica	Haiti	Guyana
Settled LM between 1990 and 1995	28.62	56.36	38.95	34.31	42.18	48.05	41.87	44.85	49.97	66.24	48.90	48.27	59.46
Internal Migrant: In another U.S. LM in 1995	34.14	34.51	40.62	42.92	27.12	38.90	37.61	31.65	33.62	21.79	39.16	36.22	30.27
Recent Immigrant: Not in U.S. in 1995	37.24	9.13	20.43	22.77	30.70	13.05	20.51	23.49	16.41	11.97	10.48	15.51	10.27