Chapter 3

Immigrant Enclaves, Ethnic Goods, and the Adjustment Process

Barry R. Chiswick and Paul W. Miller

Why do immigrants tend to live clustered together in immigrant concentrations, to be referred to here as immigrant "enclaves"? Why don't they distribute themselves across a destination country in the same manner as the native-born population? Immigrant enclaves appear to be a characteristic of the foreign born in the United States and other immigrant-receiving countries, not only today but also in earlier time periods.¹

This essay will focus on the contemporary United States. It will demonstrate the existence of immigrant concentrations or enclaves. It will then introduce the concept of "ethnic goods" as a factor explaining these enclaves and, finally, report the results of statistical analyses on the effect that these enclaves have on two dimensions of immigrant adjustment, their English-language proficiency and their labor market earnings.

Immigrant Enclaves

According to the 2000 Census of Population of the United States, about 11 percent of the population was foreign born. Foreign-born individuals are not distributed across the states in the same manner as the native-born population (table 3.1). The "Big 6" immigrant-receiving states are California, New York, New Jersey, Florida, Texas, and Illinois (table 3.2). Each of these states in 2000 had at least 4 percent of the total foreign-born population, ranging from 30 percent in California to 4 percent in Illinois. Fully two-thirds (68 percent) of the foreign born in the United States lived in these states. While overall 11 percent of the population was foreign born, the foreign-born proportion of the population in these states ranged from

80
TABLE 3.1
Percentages of Selected Immigrant Groups Residing in Top States of Residence versus Percentages of Native Born, 2000

<table>
<thead>
<tr>
<th>Other Latin America, and Caribbean</th>
<th>Europe (Excluding Former Soviet Union)</th>
<th>Canada</th>
<th>Native Born (Born in U.S.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>FL</td>
<td>NY</td>
<td>CA</td>
<td>CA</td>
</tr>
<tr>
<td>NY</td>
<td>CA</td>
<td>FL</td>
<td>TX</td>
</tr>
<tr>
<td>CA</td>
<td>FL</td>
<td>NY</td>
<td>NY</td>
</tr>
<tr>
<td>NJ</td>
<td></td>
<td>WA</td>
<td>FL</td>
</tr>
<tr>
<td>All Other*</td>
<td></td>
<td>Total</td>
<td>All Other</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>100</td>
<td>100</td>
</tr>
</tbody>
</table>

| Source: U.S. Bureau of the Census, 2000 Census of Population, Public Use Microdata Sample, 5 percent sample. Note: Detail may not add to total due to rounding. |
| All other states and Washington, D.C. |

TABLE 3.2
Foreign Born in the “Big 6” and in the United States, 2000

<table>
<thead>
<tr>
<th>State</th>
<th>% of State Population That is Foreign Born</th>
<th>% of the U.S. Foreign-Born Population in Selected States</th>
</tr>
</thead>
<tbody>
<tr>
<td>California</td>
<td>26.9</td>
<td>29.8</td>
</tr>
<tr>
<td>New York</td>
<td>18.2</td>
<td>11.3</td>
</tr>
<tr>
<td>New Jersey</td>
<td>17.5</td>
<td>4.8</td>
</tr>
<tr>
<td>Florida</td>
<td>16.9</td>
<td>8.7</td>
</tr>
<tr>
<td>Texas</td>
<td>13.8</td>
<td>9.0</td>
</tr>
<tr>
<td>Illinois</td>
<td>10.7</td>
<td>4.3</td>
</tr>
<tr>
<td>All other states*</td>
<td>5.8</td>
<td>32.1</td>
</tr>
<tr>
<td>Total U.S.</td>
<td>11.0</td>
<td>100.0</td>
</tr>
</tbody>
</table>

| All includes Washington, D.C. |

27 percent in California—yes, one in four Californians was foreign born—to 11 percent for Illinois (table 3.2).2 On closer inspection, however, it is clear that immigrants are not distributed in the same manner as the native-born population even within these states. The immigrant proportion is most intense in Southern California and the San Francisco Bay Area, along the Texas border with Mexico, in southern Florida, in the New York City metropolitan area, and in Illinois in Cook County (Chicago). Nor do immigrants have the same geographic distribution regardless of country of origin (table 3.3). Immigrants from Mexico are concentrated in the states that border Mexico, that is, in California, Texas, and Arizona. Asian immigrants are disproportionately concentrated in California and
TABLE 3.3
Percentages of Selected Immigrant Groups Residing in Top States of Residence, by Place of Birth, 2000

<table>
<thead>
<tr>
<th>Place of Birth</th>
<th>Mexico</th>
<th></th>
<th>Asia</th>
<th></th>
<th>Former Soviet Union</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>State</td>
<td>Percent</td>
<td>State</td>
<td>Percent</td>
<td>State</td>
<td>Percent</td>
</tr>
<tr>
<td></td>
<td>CA</td>
<td>45</td>
<td>CA</td>
<td>37</td>
<td>NY</td>
<td>27</td>
</tr>
<tr>
<td></td>
<td>TX</td>
<td>20</td>
<td>NY</td>
<td>10</td>
<td>CA</td>
<td>22</td>
</tr>
<tr>
<td></td>
<td>IL</td>
<td>6</td>
<td>TX</td>
<td>5</td>
<td>IL</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>AZ</td>
<td>5</td>
<td>IL</td>
<td>4</td>
<td>WA</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>All other*</td>
<td>24</td>
<td>All other</td>
<td>44</td>
<td>All other</td>
<td>40</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>100</td>
<td>Total</td>
<td>100</td>
<td>Total</td>
<td>100</td>
</tr>
</tbody>
</table>


Note: Detail may not add to total due to rounding.

* All other states and Washington, D.C.

New York. Immigrants from the former Soviet Union are to be found disproportionately in New York and California, especially in the New York City metropolitan area and Los Angeles. Immigrants from other parts of Europe and especially from Canada have a much wider geographic dispersion.

The literature suggests that there are three fundamental determinants of immigrant location in a destination (Bartel 1989). The first is the "ports of entry," seaports in the past and airports in the contemporary world. A second is "family and friends," or the results of chain migration. Immigrants tend to favor locations where others of the same country of origin have settled, especially relatives, friends, and others from their same local area. Finally, an important issue is "where the jobs are," that is, immigrants tend to settle where they have the most attractive employment opportunities for the skills that they bring with them or that they expect to acquire at the destination.

With the passage of time in the destination, immigrants engage in internal mobility. The effects of "ports of entry" diminish rapidly, and even the "family and friends" effects become less important as immigrants learn the destination language and acquire labor market information on their own. As a result, the relative importance of "where the jobs are," that is, the strictly economic incentives, increases over time. This explains, in part, why the European and Canadian immigrants have a greater geographic dispersal than the more recent immigrants from Mexico and Asia. Yet in spite of internal mobility that results in some dispersal of immigrants, im-
migrant enclaves do persist, often beyond the first generation. They persist because they offer economic advantages.

Communication costs for the immigrants can be reduced by living and/or working in a linguistic concentration area (Bauer, Epstein, and Gang, 2005). Not all members of the group need dominant language proficiency, and the earlier arrivals and those more efficient in language acquisition are more likely to become proficient. They can serve as either direct or indirect translators for communication between the enclave and the host society. The absolute demand for this specialized function increases with the size of the linguistic minority group, but the relative demand, that is, the proportion of the group requiring this skill, decreases with the size of the linguistic minority. The demand for this specialized function decreases as the members of the group learn the dominant language or, as is less likely, some of the native population learns the immigrant language.

Even aside from issues of language skills, immigrant/ethnic concentrations provide information networks that can be very valuable in social interaction, consumption activities, and employment activities. Natives of an area have acquired location-specific human capital, which includes information obtained directly and indirectly through established networks. Not being connected to host-country information networks when they arrive, immigrants have an incentive to create information networks through living in geographic concentrations with other new and longer-term immigrants from the same origin.

**Ethnic Goods**

Immigrants tend to differ from the native or host population along many dimensions related to ethnicity. They may differ in the foods they eat, the clothing they wear, the holidays they celebrate, the religion they practice, the media they read or hear (e.g., newspapers and radio), their social organizations, and the languages they speak, among other characteristics.5 There is frequently a tension among immigrants between preserving the culture of the “old country” in the new setting and adopting the culture of the host country.

Let us call “ethnic goods” the consumption characteristics of an immigrant/ethnic/religious minority group that are not shared with the host population or with members of other groups.6 These consumption
characteristics include market goods and services, such as ethnic-based clothing (e.g., saris), foods (e.g., kosher meats), and religious services (e.g., Eastern Orthodox church services). They also include the goods and services consumed that are "home produced," that is, that cannot be directly obtained in the conventional marketplace but are "produced" in the home or community. These include friendship networks, marriage markets, and family and group celebrations of national/ethnic/religious origin festivals and holidays. Market goods and services may be purchased but are combined with one's own time, and perhaps the time of others, to produce these goods and services. Thus celebrating one's national holiday may involve market goods and services (e.g., for food) and one's own time and the time of others, as it is more meaningful to celebrate in a group than alone.

To the extent that "ethnic goods" are distinctive and are important in the market basket, immigrants from a particular origin have a different market basket than the native born and immigrants from other origins. The full cost of consumption of these ethnic goods varies with both the price of purchased market goods and services and the value of the time used in their production. It also varies with the importance and distinctiveness of the ethnic goods and the size of the group.

The assimilation process is a two-way street. Mostly, it is immigrants adjusting to the American scene. But Americans also adopt or absorb aspects of immigrant culture. Chinese food, Italian pizza, celebrations of St. Patrick's Day, and Yiddishisms in the English language are examples. In a TV interview, a Korean immigrant teenager she indicated that she wanted to be just like other American teenagers, she wanted to eat pizza and bagels. When this story was told to a class, the students did not see the humor. They too were unaware of the immigrant origins of pizza and bagels.

To some extent the cost of ethnic goods can be reduced if the host society "adopts" the ethnic good. The "Americanized" version of the ethnic good, however, may well differ from the version consumed in the country of origin or by members of the ethnic group in the destination.

There are certain fixed costs and economies of scale in the production and distribution of ethnic goods. Social interaction with others of the same origin (including finding an appropriate marriage partner) may involve little in the way of conventional market goods and services but importantly involves the number of other individuals. The cost would decline (presumably at a decreasing rate) with increasing group size. For example, up to a point, an ethnic religious institution (e.g., church, mosque,
services, such as ethnic-based goods, and religious services (e.g., temple, or synagogue) or an ethnic school for the children of immigrants has a lower per capita cost for members for the same type of facility providing the same level of services to the congregants or students if it is in a larger rather than in a smaller ethnic community. There are fixed costs for buildings and hiring religious officials, among other items. The probability that enough individuals will show up on a given occasion for the religious service or celebration will rise with the size of the group.

Or consider a marriage market. The probability of finding a "good match" is greater in a larger group, all other factors being the same. As a result, the cost of search decreases with the size of the group in a given location. The group size can be enlarged by including searches in more distinct communities, but doing so increases the cost of search.

To extend the analogy, consider randomly drawing sets of balls from a bin full of balls that are 95 percent white and 5 percent red. A white ball is a "bad match" and a red ball is a "good match." The probability that there will be at least one red ball in the set (a good marriage match) increases as the number of balls in the set increases, say from five to ten to twenty. While this probability increases, it does so at a decreasing rate as the size of the set increases. The principle applies to marriage markets, friendship networks, good matches, religious institutions, and so on.

The cost of "importing" into the community ethnic-specific goods (e.g., saris, Chinese vegetables, kosher meats) also varies with the size of the market because of economies of scale. Indeed, as the size of the community increases, the manner of "importation" may change from a family making a trip to a larger nearby community to collective/cooperative efforts to place periodic bulk orders, to the establishment of a single (monopoly) outlet, to many competitive outlets selling the product. The larger the community, the lower the "full price," which includes one's own time in the activity and the cost of waiting, as well as conventional market prices.

In summary, the cost of living in an area depends, in part, on the relative cost of ethnic goods, broadly defined, and the importance and distinctiveness of ethnic goods in the person's market basket. The larger the particular ethnic/immigrant/religious community, the lower the cost of ethnic goods. The size of the share of ethnic goods in the individual's market basket and their distinctiveness are both likely to be linked to the similarity of the group's culture of origin to the culture of the host society, the extent of the group's integration into the host society, and the duration of immigrants' residence in the destination and among the native-born descendants of immigrants.
Ethnic goods have implications for individuals’ incentives to live in an ethnic concentration area, as well as for geographic differences in earnings. If ethnic goods, defined broadly, are an important part of the market basket, the person faces a higher real cost of living where ethnic goods are more expensive—largely because fewer co-ethnics live there—than where they are less expensive, namely in an area of high ethnic concentration. Thus an ethnic immigrant might be equally receptive to two similar jobs, one in a high concentration area and the other in a low concentration area, only if the latter provided a higher nominal wage that was just sufficient to compensate for the higher cost of living.

For that reason, workers would tend to gravitate to areas where their real wage was higher, that is, their nominal wage was adjusted for their cost of living. For members of an ethnic/immigrant group, there would be an inverse relation between nominal wages received and the size of the person’s ethnic group. In other words, this ethnic goods hypothesis says that the negative relation between ethnic group concentration and earnings is compensating for different costs of living. Moreover, ethnic goods can result in different geographic concentrations of various immigrant groups and differences in the pattern of regional wage differentials across immigrant groups and between immigrants and natives.

When a new immigrant group initially arrives in a country, it may be indifferent to alternative locations in the destination that are equally attractive in terms of job opportunities and ports of entry. The initial settlers would tend to be immigrants with a lower demand for ethnic goods, since they were the most willing to leave the lower-cost ethnic goods in their place of origin. Subsequent immigrants from this immigrant group would not be so indifferent to the alternative destinations, for ethnic goods would be cheaper where their co-ethnics had already settled. With the immigrant community established, those with a higher demand for ethnic goods would find immigration that much more attractive. In this manner, “ethnic goods” generate ethnic enclaves.

New ethnic concentrations away from the original center in the destination country can be formed under any of several scenarios. An individual with a very low demand for ethnic goods may settle elsewhere and gradually (and perhaps inadvertently) serve as a nucleus for others to follow. An individual with a high demand for ethnic goods may randomly receive a very high wage offer from the distribution of wage offers and settle in a new area. This person may serve as a nucleus and may even have an economic incentive to subsidize the migration of others to join him in the
new location so as to lower his cost of ethnic goods. Moreover, if for exogenous or unrelated reasons wages increase in an area outside the enclave, and if the gap between wages in this area and wages in the enclave becomes sufficiently large, incentives to migrate may arise. If the wage differential compensates for the higher cost of living because of ethnic goods, a second enclave can be established, and the first may even shrink or disappear or be replaced (succeeded) by a newer immigrant population. Thus the number of enclaves or areas of concentration will vary systematically with the size of the immigrant/ethnic group and the distinctiveness and intensity of the demand for ethnic goods. And these enclaves need not be static but may change over time.

This discussion has focused on “ethnic goods” and immigrant/ethnic/religious minorities. The analogy may be extended to any group with consumption patterns that are distinct from the majority population. If their particular market basket includes goods and services that are sufficiently distinct, are a relatively large share of that market basket, and are subject to significant economies of scale (the cost declines with larger group size), these “affinity group goods” will influence location choice and regional differences in earnings among members of the group. For example, the analysis could be applied to the gay community, since the cost of meeting others with a similar sexual orientation declines with a larger size of the group. This would explain concentrations in particular geographic areas.

Consequences of Enclaves for Language Skills

Limited destination-language proficiency is likely to reduce the earning potential of immigrants (Chiswick and Miller 1992, 1995). It raises the cost or lowers the efficiency of job searches and in many jobs may restrict access (e.g., if there is a need to pass a test that requires proficiency) or lower productivity. There may also be discrimination in the labor market by the native population (as employers, co-workers, or consumers) against those who are less proficient in the dominant language or who speak it with an accent. Working within a linguistic enclave is a mechanism for sheltering oneself from, or mitigating the adverse labor market consequences of, limited destination-language proficiency.

Living and working within a linguistic concentration area has feedback effects on destination-language proficiency. The more an individual can avoid communicating in the destination language, the slower his or her
likely rate of acquisition of dominant-language skills. Consider two individuals: one lives in a large linguistic concentration area where he or she can work, consume, socialize, and engage in other activities using the origin language, and the other lives in a linguistically isolated area where communication can be done only in the dominant language. The latter may have a more difficult initial adjustment but will have a stronger incentive to acquire destination-language skills and greater exposure that will facilitate learning the destination language.

Testing the Hypotheses

Economic theory can suggest "what may be" but cannot by itself determine "what is." For that one needs to examine data. Earlier in this essay it was demonstrated that the foreign born have a different distribution across the states of the United States than do the native born and that these immigrant enclaves differ by country or region of origin. In this section results are reported for the effect of immigrant enclaves on two key aspects of the immigrant adjustment process, English-language proficiency and labor market earnings. The previous section argued that enclaves are associated with poorer destination-language proficiency. The earnings analysis offers a test of the ethnic goods hypothesis regarding the formation and consequences for earnings of these enclaves. As we have shown, the ethnic goods concept generates the implication that reported earnings will be higher, other things being the same, the smaller the relative size of the enclave in which the immigrant lives.

The data for this analysis are from the 1990 Census of Population, Public Use Microdata Files, using a 5 percent sample of the population. The analysis is limited to adult (age twenty-five to sixty-four years) men who were born in non-English-speaking countries. The census provides data on a wide array of relevant variables that either are of primary concern or are "held constant" statistically in the analysis. These include age, years of schooling, marital status, country of birth, language spoken in the home (specific foreign language if a language in addition to or other than English is spoken), proficiency in English among those who speak another language, and labor market earnings. The statistical analyses were performed for all adult male immigrants (excluding those from developed English-speaking countries) and separately for Mexican and other immigrants.
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Hypotheses

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It is necessary to define the relevant reference group for the enclave. Country of birth might be a candidate. Yet some immigrants from a simi-
lar cultural and linguistic background come from several different coun-
tries. Spanish, for example, is the primary language of immigrants from 
Mexico and many of the countries in the Caribbean, Central America, and 
South America. German is spoken in Germany, Austria and parts of Swit-
zerland. And some countries of origin are bilingual (e.g., Belgium) or 
multilingual (e.g., India). Language is an important element in group co-
hesion, and language and culture are closely linked. For this reason, the 
respondents' linguistic backgrounds are used as the determinants of en-
claves.9 The language the immigrant speaks at home if he is not a mono-
lingual speaker of English is used for this purpose. For immigrants who 
speak only English at home, perhaps because this is the only language of 
their spouse and children, the language of their country of origin is used. 
Thus the enclave measure used for each respondent in this study is the 
proportion of the population in the state in which he lives who speak his 
language of origin.10 This is computed for the twenty-four languages other 
than English most frequently spoken by immigrants from non-English-
speaking countries.

A measure of the respondent's proficiency in English is also de-
veloped. Immigrants who report that they speak only English at home, or 
that they speak another language but that they speak English "very well" 
or "well," are considered proficient. Those who report that they speak Eng-
lish "not well" or "not at all" are considered not proficient. Under this defi-
definition 75 percent of the immigrant males in the sample are proficient: 54 
percent of those born in Mexico and 83 percent of those born in other 
countries.

The analysis for English-language proficiency indicates that the larger 
the minority-language concentration measure in the state for a respon-
dent, the lower the respondent's English-language proficiency, among im-
igrants overall and among both Mexican and non-Mexican immigrants. 
Going from a concentration measure of zero to the mean value of 7.8 per-
cent lowers the probability of being proficient in English by 3.1 percentage 
points. This is 4.2 percent of the mean proficiency of 0.73, or 73 percent. 
Among immigrants from countries other than Mexico, going from a zero 
concentration level to the mean level of 3.9 percent lowers proficiency by 
1.2 percentage points. This is 1.4 percent of the mean proficiency in this 
group of 83 percent. For immigrants from Mexico, however, going from a 
zero concentration level to the mean level of 18 percent lowers proficiency
by 18 percentage points. This is 33 percent of the mean proficiency in this
group of 54 percent. Thus the concentration measure is associated with
lower proficiency, especially among immigrants from Mexico.

The analysis of annual earnings indicates that, other things being the
same, the lower the respondent’s own language proficiency and the larger
the size of the enclave, as measured by the minority-language concentra-
tion index, the lower the earnings (Chiswick and Miller 2005). Going from
not being proficient to being proficient raises earnings by about 15 percent
for all immigrants, as well as for Mexican immigrants and for other immi-
grants considered separately. This implies that if the cost of acquiring pro-
fi ciency is approximately the equivalent of a full year’s potential earnings
the rate of return on the investment is about 15 percent. If the cost of ac-
quiring proficiency is only a half a year, the rate of return is 30 percent,
and if the cost is the equivalent of two full years of potential earnings, the
rate of return is 7.5 percent.11 Given the definition of proficiency used
here, it would seem that investment in language proficiency is a highly
profitable investment for immigrants, even if the calculation is based
solely on labor market earnings and ignores the benefits in consumption
and social activities.

Even when the respondent’s own language proficiency is held constant
statistically, the enclave measure matters. The larger the size of the minor-
ity-language concentration measure, the lower the earnings of the immi-
grants. Among all immigrants studied, going from a zero concentration
area to the mean level (7.8 percent) lowers earnings by about 4.4 percent.
This is comparable to the effect on earnings of one less year of schooling
(4.5 percent). Among non-Mexican immigrants, going from zero concen-
tration to the mean level of concentration (3.9 percent) lowers earnings
by about 2.7 percent. This is about half of the effect of one less year of
schooling (5.4 percent). Among Mexican immigrants, however, the mean
minority-language concentration measure is much higher (18 percent),
and going from a zero concentration to the mean concentration lowers
earnings by about 6.0 percent. This is the equivalent of about two less
years of schooling, since each year of schooling raises their earnings by
about 2.7 percent.

Thus living in a linguistic concentration area lowers earnings. The de-
pressing effect on earnings of living in a concentration area near the mean
compared to living where few speak one’s mother tongue is larger among
Mexican immigrants than among other immigrants from non-English-
speaking countries.
Conclusion

This essay has been concerned with the reasons for, and some consequences of, immigrants living in geographic concentrations, referred to here as enclaves. Data are reported that show that immigrants in the United States are far more concentrated geographically than the native born and that the nature of this concentration varies across immigrant groups. The geographic concentration is most intense for recent immigrant groups and for those from origins that are less similar to the United States in terms of language and culture.

The concept of "ethnic goods" is introduced to explain these patterns. Ethnic goods and services are consumption characteristics of an immigrant/ethnic/religious minority group that are not shared with the host population or with members of other groups. Ethnic goods and services may be purchased in the conventional marketplace or produced in the home or community.

The full cost of ethnic goods may decline with the growth in the size of the group because of economies of scale. If so, ethnic goods will encourage the formation of enclaves. This has feedback effects on destination-language skills and earnings.

Analyses of U.S. Census data indicate that adult male immigrants are less proficient in English if they live in a larger linguistic enclave, that is, in an area where many others are of the same linguistic background. Analyses of their earnings also indicate that, other variables being the same, the poorer the person's English-language skills and the larger the size of the linguistic enclave, the lower the person's earnings. These findings hold overall, as well as separately for Mexican and other immigrants.

The analyses suggest that the ethnic goods concept is very useful for understanding immigrant's living in enclaves, their English-language proficiency, and their earnings.

NOTES

An earlier version of this article was published as "Do Enclaves Matter in Immigrant Adjustment?" City and Community 4, no. 1 (2005): 5-35, in which economic modeling and econometric analyses are the bases for the technical exposition. Some sections of this essay are drawn from that larger study.

1. Other economic analyses of the determinants of immigrant or ethnic concentrations include Bartel (1989), Cutler and Glaeser (1997), Lazear (1999), Bauer,
Epstein, and Gang (2005), and Sierminska (2002). Lazear (1999, S99) describes concentrations as forming "in large part because doing so enhances trade" in market and nonmarket goods and services.

2. Other states with 11 or more percent of the population foreign born tend to have small populations—Arizona (14 percent), Connecticut (11 percent), Delaware (14 percent), District of Columbia (17 percent), Hawaii (19 percent), Massachusetts (12 percent), Nevada (17 percent), Rhode Island (11 percent), and Washington (11 percent). West Virginia had the smallest percent foreign born, 1.4 percent.

3. Ross (2002) develops a model in which preferences for social interaction by the majority or a minority (whether negative as in prejudice or positive as in cultural affinity) result in social segregation of neighborhoods.

4. For research on network externalities, see Economides (1996) and Katz and Shapiro (1985).

5. This is analogous to the raising of children, a home-produced "good" that involves the time of parents as well as market goods and services (e.g., food, clothing, school supplies).

6. For a study of consumer network markets and group size, see Etzioni and Weiss (2001).

7. For example, a graduate student of one of the authors explained that she was about to leave Chicago for New York because, for her ethnic group, Chicago was too small a "marriage market" and New York offered a larger pool of eligible spouses. Internet dating is a technological change that lowers the cost of searching over a wider area.

8. The details of the statistical analyses are reported in Chiswick and Miller (2005).

9. Bertrand, Luttmer, and Mullainathan (2000) also use language as the basis for their "networks" (concentrations) in an analysis of welfare participation.

10. The appropriate size of the area is not obvious. In the context of ethnic goods a neighborhood would be too small. Sampling variability also enhances measurement error problems for smaller areas, especially for languages that are not as widely spoken as Spanish. Tests indicate that the general patterns do not vary with whether the state or the metropolitan area serves as the basis for computing concentration measures.

11. By formula, $b = rk$, where $b$ is the effect of being proficient on annual earnings, $k$ is the cost of the investment measured in the number of full-year equivalent potential earnings, and $r$ is the rate of return on the investment.

REFERENCES


Referring to Etnioni, one of the authors explained that she chose her surname because, for her ethnic group, “Chicago” and “New York” offered a larger pool of eligible marriage partners than a smaller ethnic enclave. The choice was also based on the “desire to break free from the rituals of ethnic life.”

In 2000, the authors (Lazear and Miller) also use language as the basis for their analysis of welfare participation.

Sampling variability also enhances the analysis of geographic areas, especially for languages that are spoken by a significant number of residents. The authors indicate that the general patterns do not change: the number of full-year equivalent residents increases in the number of full-year equivalents. An increase in the number of full-year equivalents leads to an increase in the number of Welfare participants.

As for the question of whether immigrants are proficient in annual earnings, the number of full-year equivalents is not increased in the number of full-year equivalents. This indicates that the investment in education is not directly related to the annual earnings of immigrants.