LOCATION DECISIONS OF THE NEW
IMMIGRANTS TO THE UNITED STATES

Ann P. Bartel

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ABSTRACT

     This paper estimates a multinomial logit model of the location
decisions of new immigrants to the United States. Data from the 5-
percent Public Use Samples of the 1970 and 1980 Censuses of Population
are used to study the geographic distribution of immigrants who arrived
after 1965. The major findings are as follows:

     (1) In choosing both initial and subsequent locations, immigrants
are considerably more geographically concentrated than native Americans
who move to a new city.

     (2) All of the immigrant groups prefer to live in cities where
their countrymen are already located, but this relationship is much
weaker for the more educated immigrants.

     (3) There is ambiguous evidence on the question of whether immigrants
learn about economic opportunies as they spend time in this country. On the
one hand, with the exception of the Mexicans, distance from the home country
has a much weaker negative impact on location choice as time in the U.S.
elapses. On the other hand, the expected wage variable, which should have
a larger positive effect over time, only did so for the Asians, and to some
extent, the Central and South Americans (excluding Mexicans and Cubans).

     (4) Within each ethnic group, there are significant differences in
the location choice behavior of the 1965-69 and 1975-79 immigrant cohorts.
The results are consistent with an increase over time in the quality of
Asian immigrants, and a decrease in the quality of Mexican, Cuban and
European immigrants.

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I. Introduction

Over the past two decades, immigration to the United States has sharply increased to levels not seen since the great immigrant waves of the pre-1920 period. During the 1960s, legal immigration exceeded three million persons for the first time in thirty years, and during the 1970s it surpassed four million. As a result of this upswing, immigration has once again come to the forefront of national attention. The recent increase in immigration is largely due to the passage of the 1965 amendments to the Immigration and Nationality Act, which abolished the national origins quota system and replaced it with an ethnic-blind preference system. A second cause is the fall of U.S.-backed governments in Cuba and Indochina, producing large numbers of refugees seeking entry to the United States.

During the past ten years, economists, sociologists and demographers have begun to study the process by which the new immigrants (defined as those arriving since 1965) become integrated into American society. This literature has examined the economic status (e.g., Borjas, 1985; Chiswick, 1978, 1979; DeFreitas, 1979, 1982), fertility (e.g., Jaffe and Cullen, 1975; Kritz and Gurak, 1976), residential segregation (e.g., Massey, 1979, 1981), and political participation (e.g., Buehler, 1977) of the new immigrants. An obvious aspect of the assimilation process of the

new immigrants into American society is their settlement patterns in this country. To date, however, almost no research exists on this subject. While researchers have studied the existence of residential segregation within an urban area, no one has yet conducted a comprehensive study of regional, state or SMSA choice for the new immigrants.[1] The purpose of this paper is to develop and test a model of the location decisions (within the United States) of the new immigrants, where location is defined as an SMSA. The following questions will be addressed: (1) Where do the new immigrants first locate in the United States? (2) What variables can explain these location choices? In particular, do economic incentives play an important role in this decision? (3) How and why do the location decisions of the various ethnic groups in the immigrant population differ from each other? (4) As individuals acquire experience in this country, does this affect their knowledge and perception of economic opportunities throughout the U.S.? In other words, are economic variables more important in the choice of subsequent (as compared to initial) locations in the United States?

Data from the 5-percent Public Use Samples of the 1970 and 1980 Censuses of Population are used for the analysis. I have chosen the Census of Population as my data base because the "new immigrants" are a

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[1]One exception is a paper by Vasegh-Daneshvary, Herzog and Schlottman (1985) that analyzed the 1980 interstate distribution of college-educated immigrants who arrived between 1970 and 1974. This study is extremely limited for two reasons. First it looks at a very small percentage of the new immigrant population. Second, it does not take advantage of information on personal characteristics and merely estimates the impact of state characteristics on the proportions of immigrants located in the states. A study was also conducted by Dunlevy (1980) that examined the intended versus lifetime settlement patterns of the 19th-century European immigrants to the U.S. Dunlevy concluded that these immigrants reacted significantly to economic factors in their selection of settlement sites.

very small percentage of the population and the proportion from subsets

of foreign countries is even smaller. Empirical analysis of the internal

migration behavior of these individuals therefore requires either a

moderate-sized data set which substantially oversamples the new immi-

grants or a very large random sample. The Census of Population provides

a large number of new immigrants and contains pieces of data, such as

country of origin and year of immigration, that are not included in other

large data sets. In addition, by using data from two Census years, I am

able to observe a given cohort of immigrants at two points in time. As

shown later, this is particularly useful for analyzing the extent of

geographic assimilation that occurs with the acquisition of experience in

the U.S.[2]

Studying the location decisions of the new immigrants is an impor-

tant topic for several reasons. First, given the increased number of

immigrants to the U.S. and the impact that such population increases can

have on the economies of the receiving regions, it is necessary to gain

information on the determinants of the immigrants' location choices in

order to predict which areas can expect to receive future immigrants.

This information would aid in forecasting regional needs for federal

funding to provide economic and social services to the new immigrants.

Second, studying the determinants of the internal migration behavior

of the immigrants can shed light on the existence of potential barriers

to assimilation. The analysis in this paper will show whether additional

time spent in the United States enables the immigrant to acquire informa-

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[2]Borjas (1985) used data from two Census years in order to study the
relative importance of assimilation and across-cohort changes in immi-
grant quality in explaining cross-section analyses of immigrant earnings
growth.

tion about opportunities in various locations and, thereby, follow the migration behavior patterns of the native-born population, namely, to move in response to economic incentives.

Section II of the paper describes a model of individual location choice. Section III presents data on the 1970 and 1980 geographic distributions of the new immigrants. In Section IV a multinomial logit choice model is specified and data sources are discussed. Section V presents the results of estimating the model for two waves of immigrants. Section VI compares the behavior of the immigrants to that of native-born individuals with the same ethnicity. Conclusions and policy implications are discussed in Section VII.

II. Modeling Individual Location Choice

Assume that an individual has a set of N possible location choices and that there is a given level of utility, U_{ij}, for individual i at location j. The individual will compare the utilities associated with each of the N locations and choose that location in which the utility is largest. Hence the probability that individual i chooses location j is given by:

(1) $\qquad P_{ij} = P(U_{ij} = MAX(U_{i1}, U_{i2}, \ldots U_{iN}))$

In order to estimate equation (1), information is needed on the utility levels in each of the N locations. Utility levels are impossible to observe, however; hence an alternative approach is to specify those variables which determine utility in each location. We can begin by relying on studies of the migration behavior of the native-born

population and then consider how to modify the specification for new arrivals to this country. Previous research on the location choices of the native-born have generally found that a small set of variables describing the location can explain settlement patterns.[3] These are (1) size of the area, (2) expected earnings, (3) the probability of finding a job, generally measured by the unemployment rate, (4) the level of welfare benefits, and (5) distance from the location of origin. It has been argued that population acts as a measure of job opportunities and general economic activity thereby attracting migrants. Similarly, the higher expected earnings or the greater the probability of finding a job, the more attractive is the location. The availability of welfare benefits serves as an index of nonmarket opportunities while distance proxies the financial and psychic costs of migration.

This economic model of location choice serves as a useful starting point for analyzing the settlement patterns of the new immigrants. If these variables can explain the patterns, then we can conclude that, like the native-born population, immigrants respond to economic incentives in choosing places of residence. It is likely, however, that during their initial years in the U.S., immigrants have little information about relative economic opportunities in various locations. In particular, the location of family and friends may be the key determinant of initial location choice.[4] Hence, an additional determinant of U_{ij} might be the

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[3]Greenwood (1975) provides an excellent survey of research on internal migration in the United States.

[4]Greenwood (1969) has shown that, even in the case of native-born Americans, the location of family and friends is an important predictor of internal migration. He uses the number of individuals born in the same state as his measure of family and friends.

stock of foreign-born individuals in the location. Over time, as the immigrants become more assimilated into the American society, one would predict a decrease in the importance of the stock of foreign born and an increase in the relative importance of the economic variables in explaining the geographic distribution of the immigrant population. In addition, we would expect the distance variable to become less important (i.e, have a weaker negative effect) as time spent in the U.S. enables the immigrant to learn about locations that are distant from the port of entry.

Personal attributes of the individual may also play a role in the choice of location. For example, individuals with different characteristics may prefer different lifestyles and hence could have distinct utility values for the location choices that are unrelated to relative economic opportunities at the location. A good example is age. Some cities may provide amenities and lifestyles that are more appealing to older individuals and age would then be a determinant of the utility level of locations. The individual's education may also influence location choice if differences in returns to education are not fully captured by the expected earnings measure that is used. Finally, the individual's ethnic background can be important since the characteristics (e.g., climate, geography) of certain cities may more closely approximate the characteristics of the countries of origin.

Hence, the individual's utility level at each location is a function of a set of location characteristics, L_{ij}, and a set of personal attributes, X_{ij}. Assuming a linear relationship results in:

(2) $\qquad U_{ij} = \alpha L_{ij} + \beta X_{ij} + e_{ij}$

where α and β are the parameters to be estimated and e_{ij} is the error term.

Before turning to a description of the estimation of equation (2), the geographic distributions of the various immigrant groups studied in this paper are described in section III. Then, in section IV, the econometric specification of equation (2) is discussed.

III. Geographic Distributions of Various Immigrant Groups

As explained in the Introduction, data from the 5-percent Public Use Samples of the 1970 and 1980 Censuses of Population are used for this study. In order to minimize econometric difficulties in estimating a large multinomial logit model (described in the next section) I have restricted the analysis to individuals residing in the twenty-five largest SMSAs.[5] Since at least three-quarters of the new immigrants live in these SMSAs, this sample selection rule is not overly restrictive.[6] From the 1970 Public Use Sample, I selected male immigrants aged 22-54 who arrived between 1965 and 1969; individuals residing in group quarters such as college dormitories were excluded. In the 1980 Public Use

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[5]Although Washington, D.C. falls into this category, it is deleted from the analysis in order to exclude diplomats whose location behavior requires a unique model. Hence, to keep twenty-five SMSAs in the location choice set, the twenty-sixth largest SMSA is added to the list. It is more appropriate to use SMSAs than states as the location unit because in the economic model of location choice, the key determinants of that choice are labor market conditions; SMSAs are generally viewed as close approximations to homogeneous labor markets.

[6]As the number of SMSAs was incrementally increased beyond twenty-five, the number of immigrants in the sample increased moderately while the computational difficulties in using the multinomial logit technique increased dramatically.

Sample, this cohort of immigrants could also be observed as those individuals aged 32-64 who arrived between 1965 and 1969. From the 1970 Census, we therefore have information on their "initial" location choices and in the 1980 Census we observe their locations some ten to fifteen years after immigrating. Another sample is also selected from the 1980 Census, namely, individuals aged 22-54 who arrived between 1975 and 1979. These individuals are observed in their "initial" locations in 1980 and their geographic distribution can be compared to the 1965-69 cohort's distribution in 1970.

Table 1 shows the 1970 distribution of male immigrants aged 22-54 who arrived in this country between 1965 and 1969. As a frame of reference, the table also shows each SMSA's share of natives who moved into one of the 24 SMSAs between 1965 and 1970.[7] Comparing the distribution of the immigrants to that of native movers shows whether immigrants are choosing those cities that are also receiving individuals from other parts of the country. In Column (1) the distribution across the 24 SMSAs of immigrants from all countries is shown. Columns (2) through (6) show the distributions for five ethnic groups: Asians, Central and South Americans,[8] Mexicans, Cubans, and Europeans. Below each column, I report a Herfindahl index that measures the degree of geographic concentration

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[7]Data on the native in-migrants are reported by broad age category and the group aged 20-54 was the closest to the 22-54 age group I am using for the immigrants.

[8]This category excludes Cubans and Mexicans.

of each of the groups.[9] The maximum value of the index is unity (which occurs when all of the individuals are in one SMSA) and the minimum value is 1/N (which occurs when all of the N cities have equal shares of individuals). The data in column (1) show that in 1970, the immigrants who arrived between 1965 and 1969 were less dispersed than the native migrants of similar age; the Herfindahl index for the immigrants is more than double that of the natives and almost one-third of the immigrants first located in New York.

Distinguishing the immigrants according to their country of birth shows important differences. The Herfindahl indices for the Asians and Europeans are considerably lower than those of the Central and South Americans, Mexicans and Cubans. Although sixty percent of the Asians chose Los Angeles, New York or San Francisco as their initial U.S. location, a number of other cities had sizable representations. Similarly, although New York and Chicago accounted for 45 percent of the Europeans' locations, at least seven other cities received large numbers of these immigrants. The other groups are more heavily concentrated, with seventy-six percent of the Mexicans choosing Chicago or Los Angeles, fifty-three percent of the Cubans choosing Miami and sixty-two percent of other Central and South Americans choosing New York.

Table 2 shows the 1980 geographic distribution of the 1965-69 immigrants, i.e., ten to fifteen years after their arrival in this country. Comparing the Herfindahl indices in Tables 1 and 2 shows that some interesting changes occurred between 1970 and 1980. Asians,

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The index is defined as $\sum_{i=1}^{n} S_i^2$ where S_i is the proportion of individuals in the ith SMSA.

Table 1

1970 Geographic Distribution of Male Immigrants
Aged 22-54 Who Arrived Between 1965 and 1969

		(1)	(2)	(3)	(4)	(5)	(6)
SMSA	SMSA's Share of Native 1965-70 In- migrants*	All Countries N=2839	Asians N=591	Central and South Americans N=500	Mexicans N=317	Cubans N=349	Europeans N=813
Anaheim	3.5	1.2	.3	.4	2.5	.9	1.2
Atlanta	2.7	.4	.7	-	-	-	.5
Baltimore	1.7	1.4	3.1	1.2	-	-	1.7
Boston	2.8	4.9	4.1	2.8	-	1.7	8.0
Chicago	6.1	11.1	10.7	5.2	22.7	7.7	12.6
Cleveland	1.8	1.8	1.4	.8	-	-	4.6
Dallas	5.5	.9	1.4	-	2.2	.3	.9
Denver	3.7	.6	.5	.4	.6	-	.7
Detroit	3.6	3.6	4.2	1.0	.3	-	6.4
Houston	7.5	1.4	1.7	.6	4.7	-	.6
Los Angeles	14.4	17.5	19.6	11.6	53.3	13.8	7.9
Miami	1.1	7.9	.3	3.4	-	52.7	1.1
Minn./St. Paul	3.5	1.1	1.7	1.0	-	-	1.1
Newark	0.8	3.2	1.9	3.8	-	5.4	4.9
New York	10.5	29.0	24.2	61.6	.3	14.6	32.1
Philadelphia	3.2	2.1	2.0	1.0	-	.3	4.3
Phoenix	3.9	.5	.7	-	.6	-	-
Pittsburgh	1.2	.6	.7	.4	-	-	1.5
Riverside/San Bern.	2.0	.9	1.2	.4	3.2	-	.4
San Diego	6.7	1.3	1.4	-	5.7	-	1.1
San Francisco	6.0	6.6	15.4	3.6	3.8	.3	5.9
Seattle	3.8	1.4	2.2	.6	-	-	2.1
St. Louis	1.2	.3	.9	.2	-	-	.3
Tampa	2.8	.4	-	-	-	2.3	.3
Herfindahl Index	.065	.144	.139	.401	.345	.328	.147

*Native in-migrants are aged 20-54.

Europeans and Central and South Americans became more dispersed, with the largest change occurring for the latter group. The concentration of Mexicans remained about the same,[10] while Cubans became noticeably more concentrated as Miami's share grew from 53 percent to 67 percent. For each of the immigrant groups, the inter-SMSA movement that occurred between 1970 and 1980 primarily conformed to the overall migration of the U.S. population from the Frostbelt to the Sunbelt in the 1970s. Cities such as New York and Chicago lost these people while Houston, Miami, Los Angeles and San Diego gained.

Finally, Table 3 presents data on the "initial" location choices of immigrants aged 22-54 in 1980 who arrived between 1975 and 1979. Comparing the Herfindahl indices for the immigrants and the 1975-80 native in-migrants shows that these immigrants were also considerably more geographically concentrated than native movers. Los Angeles and New York, in particular, attracted very large shares of the recent immigrants. Columns (2) through (6) can be compared to the same columns in Table 1 in order to examine cohort differences for each ethnic group. There are a number of interesting findings here. The Central and South Americans who arrived between 1975 and 1979 were noticeably less concentrated in 1980 than their 1965-69 counterparts were in 1970; the Herfindahl index for the recent cohort is only half the magnitude of the index for the earlier cohort.[11] The dominant change for this ethnic

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[10]Although the Mexicans' Herfindahl index did not change between 1970 and 1980, the frequency distributions show that there was a fair amount of moving between SMSAs during the time interval.

[11]The 1975-79 arrivals are even more dispersed in their initial locations than their 1965-69 countrymen were ten to fifteen years after arrival.

Table 2

1980 Geographic Distribution of Male Immigrants
Aged 32-64 Who Arrived Between 1965 and 1969

SMSA	SMSA's Share of Native 1975-80 In-Migrants*	(1) All Countries N=3083	(2) Asians N=593	(3) Central and South Americans N=664	(4) Mexicans N=424	(5) Cubans N=356	(6) Europeans N=752
Anaheim	5.8	2.5	5.6	.6	3.8	-	2.1
Atlanta	3.9	.6	.7	.2	-	.8	1.1
Baltimore	2.3	.6	1.2	.8	-	-	.8
Boston	2.4	3.1	2.9	2.4	-	1.1	6.3
Chicago	4.8	8.9	10.0	5.6	13.2	3.7	12.5
Cleveland	1.5	.8	.3	.2	-	.3	2.3
Dallas	5.9	1.2	1.4	.3	3.1	.8	.9
Denver	3.9	.4	.5	.2	.2	-	.4
Detroit	2.7	2.6	4.4	.3	.5	-	5.7
Houston	6.3	2.6	3.4	1.2	8.0	.8	1.2
Los Angeles	8.3	19.0	19.6	11.8	57.1	7.0	8.9
Miami	3.0	10.7	.5	6.3	-	67.4	2.0
Minn./St. Paul	2.2	.3	.5	.2	-	-	.4
Nassau/Suffolk	3.6	2.2	1.5	3.2	-	.8	3.7
Newark	2.6	3.5	2.4	3.8	.2	5.1	5.9
New York	4.8	26.0	16.7	57.2	.7	8.2	28.5
Philadelphia	3.4	1.8	2.9	1.1	-	.3	3.3
Phoenix	4.8	.7	.7	.2	.5	-	1.1
Pittsburgh	1.6	.6	.7	-	-	-	1.5
Riverside/San Bern.	5.5	1.0	.8	.2	2.4	-	1.3
San Diego	4.6	2.0	2.4	.2	5.2	-	2.4
San Francisco	5.5	6.8	18.9	3.3	5.0	1.1	4.4
Seattle	3.3	.9	1.2	-	-	-	2.1
St. Louis	2.2	.5	1.0	.3	-	-	.7
Tampa	5.3	.9	.2	.9	.2	2.5	.7
Herfindahl Index	.047	.134	.122	.353	.358	.471	.123

*Native in-migrants are aged 30-64.

Table 3

1980 Geographic Distribution of Male Immigrants
Aged 22-54 Who Arrived Between 1975 and 1979

SMSA	SMSA's Share of Native 1975-80 In-Migrants*	(1) All Countries N=5681	(2) Asians N=1932	(3) Central and South Americans N=1012	(4) Mexicans N=1260	(5) Cubans N=78	(6) Europeans N=638
Anaheim	5.0	4.4	4.2	1.6	9.2	1.3	3.0
Atlanta	4.0	.8	1.1	.8	-	-	1.4
Baltimore	2.4	.8	.8	.7	-	-	1.4
Boston	3.5	2.9	3.0	3.6	-	1.3	5.2
Chicago	5.5	9.2	8.9	3.2	14.1	5.1	12.5
Cleveland	1.6	.7	.9	.3	-	-	2.2
Dallas	6.1	2.9	2.4	.5	6.7	2.6	.9
Denver	4.3	1.0	1.2	.3	.9	-	1.1
Detroit	2.9	1.6	2.9	.5	.1	-	2.7
Houston	6.8	5.6	5.1	3.1	10.4	1.3	2.5
Los Angeles	8.7	26.6	26.0	19.8	45.9	2.6	12.2
Miami	2.3	4.8	1.0	14.1	.4	73.1	2.8
Minn./St. Paul	2.9	1.0	1.8	.4	.1	-	1.6
Nassau Suffolk	2.7	.9	.5	1.6	-	-	3.6
Newark	2.3	2.3	1.4	3.9	.1	3.9	6.0
New York	5.8	18.5	15.7	40.1	1.1	3.9	23.5
Philadelphia	3.7	2.3	2.5	1.1	.2	1.3	5.2
Phoenix	3.9	.8	.5	.1	2.1	-	.9
Pittsburgh	1.7	.4	.7	.2	-	-	.5
Riverside/San Bern.	4.3	1.1	.7	.4	2.1	-	.5
San Diego	5.1	2.6	3.5	.13	.6	-	1.9
San Francisco	5.7	6.6	11.9	2.9	2.9	1.3	5.5
Seattle	3.4	1.3	2.4	.4	.2	-	1.7
St. Louis	2.3	.4	.4	.1	.1	-	.3
Tampa	3.3	.5	.5	.5	.2	2.6	.9
Herfindahl Index	.047	.130	.125	.226	.256	.543	.104

*Native in-migrants are aged 20-54.

group was the sharp fall in New York's share and the rise in the shares of Los Angeles and Miami. Similarly, the recent Mexican immigrants were more dispersed than their earlier counterparts. Chicago and Los Angeles only accounted for 60 percent of the choices of the 1975-79 arrivals as compared to 76 percent for the earlier arrivals. The 1975-79 arrivals from Asia and Europe were moderately less concentrated in 1980 than were their 1965-69 counterparts in 1970. Although the Herfindahl indices for these groups are largely unchanged, there are noticeable differences between the 1970 and 1980 frequency distributions. In particular, for both groups, New York's share fell, while the shares of Sunbelt cities such as Anaheim, Houston and Los Angeles rose. Finally, in the case of the Cubans, the more recent immigrants were considerably more concentrated than the earlier counterparts, with Miami's share rising from 53 percent to 73 percent.

In sum, the data in Tables 1, 2 and 3 show that the new immigrants are more geographically concentrated than native Americans who have recently moved to new cities. We have seen, however, that it is important to distinguish the various ethnic groups in the immigrant population. At a given point in time, the geographic distributions of the ethnic groups are remarkably different. Examining changes between 1970 and 1980 for the 1965-69 arrivals also indicates that general statements cannot be made about these changes for all five ethnic groups. The research problem is to explain why various ethnic groups seem to systematically prefer certain SMSAs, why the 1970 and 1980 distributions differ for a given cohort (i.e., the 1965-69 arrivals), and why the two cohorts have different distributions. In order to answer these questions, equation (2) will be estimated for each of the immigrant groups in the

sample. The specification of equation (2) is discussed in the next section of the paper.

IV. Econometric Specification

A. The Multinomial Logit Procedure

As shown in equation (1) in Part II, the probability that individual i chooses location j is the probability that the utility associated with j is greater than the utility associated with any other potential location. The individual's utility level at each location was assumed to be a linear function of a set of location characteristics and a set of personal attributes as shown in equation (2). For convenience, rewrite equation (2) as:

$$(3) \qquad U_{ij} = \gamma Z_{ij} + e_{ij}$$

where $Z_{ij} = [L_{ij}, X_{ij}]$ and $\gamma = [\alpha, \beta]$

Using equation (3), we can write the probability of choosing location j as:

$$(4) \qquad P_{ij} = P(Z_{ij} + e_{ij} > Z_{i1} + e_{i1}, \ Z_{ij} + e_{ij} > Z_{i2} + e_{i2} \cdots$$
$$\cdots Z_{ij} + e_{ij} > Z_{iN} + e_{iN})$$

It has been shown (McFadden 1973) that if the e's are all assumed to be independently identically distributed Weibull, then (4) can be rewritten as:

$$(5) \qquad P_{ij} = \exp(Z_{ij}\gamma) / \sum_{n=1}^{N} \exp(Z_{in}\gamma)$$

Equation (5) is the likelihood function for any individual i ob-
served to be in location j. The log of this likelihood function can be
summed across all individuals and maximized with respect to the γ's. The
resulting estimates of γ provide information on the impact of the vector
of Z variables in a particular location on the underlying utility level
that the individual associates with that particular location. If a
variable in Z_{ij} increases utility, its estimated coefficient will be
positive, i.e., it has a positive effect on the probability that a
location is chosen over all the alternative locations.

B.   Variables and Data Sources

The first component of the vector Z is a set of characteristics
describing each SMSA in the choice set. The following variables were
obtained from the published volumes of the 1970 and 1980 Censuses of
Population: TOTPOP -- the total population in the SMSA; UNEMP -- the
unemployment rate of males 16 years of age and older in the SMSA; and
PFORB -- the percentage of the population in the SMSA that is foreign-
born. PFORB is calculated separately for each ethnic group that is
studied. The level of welfare benefits is measured by GENAST, the real
average monthly general assistance payment per recipient, which is a good
proxy for the level of social services in the SMSA. The nominal figures
are obtained from the Public Assistance Statistics and are deflated by
the BLS cost-of-living index for each SMSA. PFORB, TOTPOP and GENAST are
predicted to have positive signs, while UNEMP is predicted to have a
negative sign. The wage that the immigrant would expect to receive in
each SMSA is measured by the mean wage (WAGE) of immigrants in that SMSA,
classified by immigrant cohort and ethnicity. This is calculated from

the data in the Public Use Samples. This wage variable is far superior

to an overall mean or median earnings measure for each SMSA, which would

give a very imperfect measure of an _immigrant_'s opportunities in differ-

ent cities.[12] Classifying the immigrant wage variable by ethnicity and

cohort adds even more precision.[13] One problem with this approach,

however, is that it requires limiting the analysis to cities in which the

immigrants are actually located. This is not a problem for the Asians,

Europeans and Central and South Americans who are represented in each of

the 25 cities being studied. It is a problem for the Mexicans and Cubans

who are each concentrated in a much smaller set of cities. The result is

that for the latter two groups, the number of cities actually included in

the multinomial logit analysis ranges between eight and twenty. Finally,

another characteristic of the SMSAs that may be important in explaining

the location choices of the immigrants is the distance from the immi-

grant's home country to the SMSA. Data on air distances between each of

the foreign countries and each of the SMSAs (DISTANCE) were obtained from

Fitzpatrick and Modlin (1986). It is expected that DISTANCE will have a

negative sign in the regressions.

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[12]The paper by Vasegh-Daneshvary et al. referred to earlier used
median family income as a measure of market opportunities in different
locations.

[13]Another approach is to estimate a wage equation for each immigrant
group and include a vector of dummy variables for the 25 cities. The
parameters could then be used to predict a wage for each individual in
each city. The advantage of this approach is that it controls for
differences in the characteristics of the immigrants across SMSAs. The
disadvantage is that the reliability of the predicted wage depends on the
precision with which the parameters are estimated. I tried this approach
and found that the results reported in Section V were largely unchanged
but I prefer using the mean wage variable since it is not dependent on a
set of parameters which may not be terribly robust.

It was argued in Part II that, in addition to location characteristics, personal attributes themselves can determine the relative utility values of the locations. Since the location probability equations are estimated separately for each ethnic group, the role of ethnicity itself in determining location choice is already taken into account. The effect of personal attributes such as age and education could also be estimated by including them as regressors in the logit equation. This would mean estimating 24 parameters for each personal variable since there are 25 cities in the choice set. Unfortunately, this approach proved to be computationally intractable and the algorithm never converged. Hence, an alternative procedure, interacting the personal variables with some of the location characteristics, is used.[14]

The results of estimating the multinomial logit model for various immigrant groups are presented in the next part of the paper. The reader should keep in mind the fact that, as discussed above, in the case of the Cubans and Mexicans, the empirical analysis only deals with the distribution of the immigrants across a restricted set of cities. It is unable to answer the question of why these individuals do _not_ locate in the other cities in the original sample. For this reason, the reader is urged to focus on the results presented for the Asians, Central and South Americans, and Europeans.

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[14]In fact, using multiple interaction terms in the same equation resulted in non-convergence in many cases. Hence, I decided to concentrate on the interactions with PFORB since a major concern is how different types of immigrants react to the location of fellow countrymen.

V.   Results for Immigrants

A.   1965-69 Arrivals

In Tables 4 and 5, the results of estimating equation (5) for the
male immigrants who arrived between 1965 and 1969 are shown. Each table
has two parts. The top half shows the coefficients from the model with
the six regressors, PFORB, TOTPOP, EWAGE, UNEMP, GENAST and DISTANCE.
The bottom half reports three coefficients from the model which added two
interaction terms: AGEPF, which is AGE*PFORB, and EDUCPF, which is
EDUC*PFORB; only the coefficients on PFORB, AGEPF and EDUCPF are shown.
In Table 4, the determinants of the 1970, or initial location choices of
the 1965-69 immigrants are analyzed. Table 5 shows the determinants of
their 1980, or subsequent location choice. The individuals who are used
for the analysis in Table 4 are between the ages of 22 and 54 while those
in Table 5 are between the ages of 32 and 64. Comparing Tables 4 and 5
enables us to explore the role of assimilation in location choice be-
cause, by 1980, these individuals have been in the U.S. between ten and
fifteen years.

In Table 4, we see that location of fellow countrymen, as measured
by PFORB, is the most powerful explanatory variable for all the ethnic
groups. An important finding is that the more educated immigrants place
less emphasis on this factor than the less educated in choosing their
initial locations. The differential role of PFORB for young and old
cohorts does not have a clear pattern; AGEPF is significant only for the
Cubans, for whom it can be observed that the older immigrants are more
dependent on the location of their fellow Cubans.

Table 4

Multinomial Logit Analysis of 1970 Location Choices
of Male Immigrants Arriving Between 1965 and 1969,
Aged 22-54 in 1970*

	(1) Asians	(2) Central and South Americans	(3) Mexicans	(4) Cubans	(5) Europeans
PFORB	56.60	77.56	318.97	23.34	19.62
	(8.80)	(5.99)	(10.32)	(7.54)	(6.35)
TOTPOP	2.65	2.12	1.82	3.29	1.42
	(19.80)	(7.55)	(7.02)	(6.13)	(7.69)
WAGE	-.72	-.96	3.17	5.62	.59
	(-2.44)	(-2.98)	(5.32)	(3.28)	(3.20)
UNEMP	-12.90	15.05	-140.56	86.35	10.31
	(-1.80)	(1.36)	(-7.43)	(3.34)	(2.47)
GENAST	.01	.01	-.05	.03	.01
	(3.16)	(2.65)	(-2.62)	(3.99)	(1.09)
DISTANCE	-4.05	-.06	1.32	-1.11	-.14
	(-2.69)	(-.42)	(4.71)	(-2.76)	(-2.55)
PFORB	119.73	101.11	365.34	12.43	42.00
	(4.27)	(3.44)	(8.60)	(2.40)	(6.02)
AGEPF	-.19	.91	-.79	.34	-.20
	(-.33)	(1.46)	(-1.01)	(3.39)	(-1.34)
EDUCPF	-4.10	-4.83	-3.37	-.26	-1.43
	(-4.05)	(-3.71)	(-2.07)	(-1.42)	(-5.48)
N	583	490	317	339	789

*t-values are given in parentheses. The two panels of the table are described in the text.

The effects of the other variables in the model are not consistent across the five ethnic groups. The expected wage in the SMSA is positive and significant only for the Mexicans, Cubans, and Europeans. Unemployment rates have the hypothesized negative coefficient only for the Asians and Mexicans. The welfare variable, GENAST, is positive and significant only for the Asians, Central and South Americans, and Cubans. Finally, DISTANCE is negative and significant in three out of five cases; the positive coefficient for Mexicans reflects their large representation in Chicago in 1970.

In Table 5, the 1980 location decisions of the 1965-69 immigrants are examined. Since by 1980 these individuals have been in the U.S. between ten and fifteen years, the model developed in Part II predicts that PFORB should now be a less important determinant of location choice, the economic variables should be more significant, and DISTANCE should have a weaker negative effect. This prediction is based on the assumption that as immigrants spend time in the U.S., they learn about relative economic opportunities in different cities and have less of a need to rely on family and friends for economic and moral support. The estimates in Table 5 are partially consistent with this hypothesis. PFORB is still the most important determinant of location choice. However, DISTANCE is only negative and significant in one case (the Mexicans), indicating that with time spent in the U.S., most immigrants do move away from their ports of entry. The predicted change for the WAGE variable holds true only for the Asians and the Central and South Americans. The other ethnic group for whom the analysis is most reliable, the Europeans, unfortunately shows a decrease in the importance of the wage variable between 1970 and 1980, but an increase in the significance of GENAST.

Table 5

Multinomial Logit Analysis of 1980 Location Choices
of Male Immigrants Arriving Between 1965 and 1969,
Aged 32-64 in 1980*

	(1) Asians	(2) Central and South Americans	(3) Mexicans	(4) Cubans	(5) Europeans
PFORB	49.73	33.25	20.10	21.36	23.43
	(11.49)	(10.14)	(4.64)	(15.93)	(6.68)
TOTPOP	2.29	2.79	3.08	2.34	1.99
	(11.09)	(9.27)	(7.21)	(4.97)	(9.86)
WAGE	.74	.14	.32	-.12	.01
	(3.21)	(.61)	(1.08)	(-.37)	(.03)
UNEMP	2.09	-17.75	-8.20	-4.11	2.79
	(.67)	(-3.47)	(-1.28)	(-.41)	(1.04)
GENAST	.02	.03	.04	.01	.02
	(2.25)	(3.43)	(2.06)	(.63)	(3.44)
DISTANCE	2.34	-.06	-1.16	.02	.04
	(2.08)	(-.80)	(-3.26)	(.17)	(.81)
PFORB	78.30	40.24	29.05	20.88	20.87
	(4.73)	(3.80)	(2.91)	(4.99)	(2.11)
AGEPF	-.03	.48	-.07	.07	.37
	(-.09)	(2.43)	(-.32)	(.91)	(2.03)
EDUCPF	-1.84	-2.30	-.90	-.28	-1.24
	(-3.70)	(-5.45)	(-2.61)	(-2.15)	(-4.08)
N	591	662	424	356	752

*t-values are given in parentheses. The two panels of the table are described in the text.

Indeed, in 1980, GENAST is the most consistent determinant of location choices for the five ethnic groups.

B.   1975-1979 Arrivals

Table 6 presents the results of estimating equation (5) on the 1980, or "initial," location choices of the male immigrants who arrived between 1975 and 1979. This table can be compared to Table 4, which examined the initial location choices of the 1965-69 arrivals, to explore whether the two cohorts behaved differently in choosing their initial locations in the U.S.

In Table 6, we see that, as in Tables 4 and 5, the most important determinant of location choice is PFORB and, except for the Cubans, the interaction term between PFORB and EDUC is negative and significant. Comparing Tables 4 and 6 shows that the role of DISTANCE in the choice of initial location has changed for some of the groups; the Central and South Americans and Europeans chose more distant initial locations while the Mexicans located closer to home. Market opportunities, as measured by WAGE, also play a different role. The recent Asian immigrants chose initial locations that had high expected wage rates and low unemployment rates, unlike the Asian arrivals in the 1960s, who chose cities with low unemployment and high welfare opportunities. This is an important difference since it indicates that the more recent arrivals acquired information regarding regional wage differentials within a very short span of time. For the Mexicans, Cubans and Europeans, however, the wage variable was positive and significant for the earlier cohort, but not for the 1975-79 arrivals. There is no change in the effect of WAGE for the Central and South Americans.

Table 6

Multinomial Logit Analysis of 1980 Location Choices
of Male Immigrants Arriving Between 1975 and 1979,
Aged 22-54 in 1980*

	(1) Asians	(2) Central and South Americans	(3) Mexicans	(4) Cubans	(5) Europeans
PFORB	33.19	40.73	10.49	16.12	12.92
	(14.25)	(19.0)	(4.68)	(5.32)	(3.74)
TOTPOP	3.11	2.23	3.35	1.04	2.46
	(26.33)	(10.77)	(15.84)	(.71)	(11.13)
WAGE	.46	-.18	-1.05	.54	-.49
	(2.99)	(-1.58)	(-4.64)	(.87)	(-1.89)
UNEMP	-8.41	-20.28	-21.36	2.35	-9.23
	(-4.15)	(-4.53)	(-6.05)	(.05)	(-2.90)
GENAST	-.01	-.01	.06	.01	.01
	(-.57)	(-1.49)	(6.60)	(.14)	(3.05)
DISTANCE	-.80	.33	-1.80	-.24	(3.05)
	(-1.42)	(5.74)	(-9.53)	(-.29)	(1.15)
PFORB	28.19	30.74	17.75	12.35	23.06
	(4.07)	(5.06)	(4.02)	(1.57)	(2.44)
AGEPF	.37	.49	-.14	.04	.06
	(2.54)	(3.24)	(-1.24)	(.28)	(.33)
EDUCPF	-.51	-.47	-.44	.19	-.95
	(-1.77)	(-1.79)	(-2.28)	(.62)	(-2.58)
N	1932	1009	1260	76	638

*t-values are given in parentheses. The two panels of the table are described in the text.

What can account for the observed differences in the behavior of the 1965-69 and 1975-79 cohorts? Recent work by Chiswick (1986) provides an answer. His analysis of earnings shows that there have been noticeable trends in "the unmeasured dimensions of immigrant productivity, such as language fluency, the quality of schooling and experience, and ability" (Chiswick, p. 182). In particular, Chiswick finds that the quality of Asian immigrants who arrived in the 1970s exceeds that of the immigrants who arrived in the 1960s. Mexican and Cuban immigrants who arrived in the 1970s were found to be of lower quality than their 1960s counterparts. Chiswick's white immigrant category, which includes Europeans and other Hispanics, showed no change in quality over the decade. Chiswick's findings can provide an explanation for the results I have presented. The Asians who arrived between 1975 and 1979 are found to be more responsive or more knowledgeable about relative economic opportunities than the 1960s arrivals, and this is exactly what we would expect to observe if there has been an increase in immigrant "quality." On the other hand, the Mexicans who arrived in the 1960s were found to choose their initial locations on the basis of economic attributes of the cities (even locating far from home in some cases), quite unlike their 1970s counterparts; and this is perfectly consistent with Chiswick's finding of a decrease in quality of Mexican immigrants over time.

VI. Results for Natives

In order to understand whether the location choice patterns of the immigrants can be explained by their ethnicity, or by the fact that they are recent arrivals to the United States, an analysis of native-born

males who are members of the same ethnic groups as the immigrants is conducted.[15] The natives were restricted to be between the ages of 32 and 64 so that they could be compared to the immigrants who had already been in the U.S. for ten to fifteen years and who, presumably, have acquired some information about different areas in the U.S.[16]

Table 7 shows the frequency distribution of the natives in 1980 and the corresponding Herfindahl indices. It is noteworthy that these distributions are quite different from the total population distribution. For example, the Asian and Central and South American natives are more likely to be located on the West Coast and less likely to be in the Midwest than the rest of the population. Fully one third of the Mexican natives are in Los Angeles, and another twenty percent are in other parts of California. One-third of the Cuban natives are in New York City and 25 percent are in Florida. Comparing Table 7 to Table 2 shows the relative importance of ethnicity and birthplace. The Asian natives and immigrants have sharply different distributions. The natives are much more likely to be in Los Angeles and less likely to be in Chicago and New York, compared to the immigrants. In fact, the natives are much more geographically concentrated than the immigrants. For the Central and South Americans, we also find very different distributions for the

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[15]This was not done for the Europeans because of the difficulty in interpreting the ancestry information for the white natives. Often multiple ancestries were reported, making it difficult to determine ethnicity. For the other four groups of natives, direct information on ethnicity was available.

[16]The analysis was also done for natives aged 22-54 and the results were virtually identical.

Table 7

1980 Geographic Distribution of Native Born Males
of Specified Ethnicity, Ages 32-64

SMSA	SMSA's Share of All Males Ages 30-64	(1) Asians N=616	(2) Central and South Americans N=776	(3) Mexicans N=2685	(4) Cubans N=58
Anaheim	2.7	5.8	3.7	6.2	5.2
Atlanta	2.7	.2	.9	.2	-
Baltimore	2.9	.6	1.0	.3	3.5
Boston	3.6	2.1	1.7	.1	1.7
Chicago	9.3	4.2	3.4	5.7	1.7
Cleveland	2.5	-	-	-	-
Dallas	3.9	1.1	1.8	7.3	-
Denver	2.2	2.1	9.9	4.7	-
Detroit	5.7	1.6	2.7	1.6	-
Houston	3.9	1.3	3.6	10.5	1.7
Los Angeles	10.0	38.0	17.8	33.8	10.4
Miami	2.1	-	2.7	.5	8.6
Minn./St.Paul	2.7	.2	-	.6	1.7
Nassau/Suffolk	2.1	.8	3.1	.2	3.5
Newark	3.7	.5	2.3	.3	1.7
New York	12.1	5.5	10.1	.6	31.0
Philadelphia	6.2	1.5	1.7	.3	-
Phoenix	1.9	1.1	1.7	6.7	1.7
Pittsburgh	3.1	.3	1.0	.2	1.7
Riverside/San Bern	2.0	1.5	4.1	8.5	1.7
San Diego	2.3	3.7	3.5	4.7	-
San Francisco	4.8	21.6	13.0	5.9	5.2
Seattle	2.3	5.4	2.7	.7	-
St. Louis	3.0	.3	.9	.5	1.7
Tampa	1.9	.5	6.7	.2	17.2
Herfindahl Index	.057	.206	.085	.158	.155

natives and immigrants. Half of the immigrants are in New York as
compared to 10 percent of the natives, while the natives are more likely
to be in the West. For this ethnic group, however, the natives are much
more _dispersed_ than the immigrants. While the Mexican natives and
immigrants have similar distributions with both primarily in the West,
the immigrants are much more highly concentrated. Finally, the Cuban
natives differ from the Cuban immigrants in that the former have a
significant representation in New York, followed by Tampa, Los Angeles
and Miami, while two-thirds of the latter are in Miami; again, the
natives are more dispersed than the immigrants. In sum, with the excep-
tion of the Asians, the native ethnic groups are more dispersed through-
out the U.S. than the immigrants.

The results of estimating the multinomial logit equation are shown
in Table 8 and should be compared to the immigrant results in Table 5.[17]
The Asian natives, like the Asian immigrants, choose locations based on
the stock of individuals of similar ethnicity. All of the economic
variables have the right sign and are significant for the Asian natives;
the only difference between the natives and the immigrants is the
insignificnace of UNEMP for the immigrants. The Central and South
American natives are quite different from their foreign-born counterparts
since PFORB has no effect in the native regression but was the dominant
variable in the immigrant regression. Another difference for this group
is that WAGE has a negative effect for the natives! Mexican natives,
like Mexican immigrants, choose locations with high concentrations of

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[17]The equations were also estimated using data from the 1970 Census
for the natives who were aged 22-54 in 1970. The results are very
similar to those shown in Table 8.

Table 8

Multinomial Logit Analysis of 1980 Location Choices
of Native-Born Males Aged 32-64 in 1980*

	(1) Asians	(2) Central and South Americans	(3) Mexicans	(4) Cubans
PFORB	43.93	.54	38.69	-2.99
	(18.95)	(.24)	(37.74)	(-.94)
TOTPOP	2.49	1.68	-.46	2.50
	(13.51)	(7.92)	(-3.58)	(3.56)
WAGE	2.55	-.39	-3.11	-1.61
	(7.44)	(-1.50)	(-12.44)	(-2.82)
UNEMP	-21.69	-15.62	-8.15	-16.55
	(-5.21)	(-6.18)	(-4.42)	(-.90)
GENAST	.02	.01	-.01	-.03
	(2.97)	(3.59)	(-3.60)	(-1.88)
PFORB	15.02	-1.03	17.56	9.57
	(.84)	(-.09)	(4.81)	(.51)
AGEPF	.19	-.04	.30	-.10
	(.78)	(-.25)	(5.02)	(-.35)
EDUCPF	1.42	.29	.71	-.68
	(1.97)	(.58)	(4.94)	(-.95
N	613	776	2685	57

*t-values are given in parentheses. The two panels of the table are described in
the text.

Mexicans. However, they differ from the immigrants in that both WAGE and GENAST have negative coefficients.[18] Can the location choice behavior of the immigrants be explained by their ethnicity? This analysis shows that it is only in the case of the Asians that the same behavioral model can be applied to both the natives and the immigrants. Although the Asian natives and immigrants have different geographic distributions, the parameter estimates follow a similar pattern for the two groups.

VII. Summary

This paper developed and tested a multinomial logit model of the location decisions of new immigrants to the United States. Data from the 5-percent Public Use Samples of the 1970 and 1980 Censuses of Population were used to study the distribution of the 1965-69 and 1975-79 immigrants across the top 25 SMSAs in the U.S. In this section of the paper, the major findings of the study are summarized.

1. In choosing both initial and subsequent locations, immigrants are considerably more geographically concentrated than native Americans who move to a new city. There are interesting differences, however, in the degree of concentration of the initial locations of the two cohorts. For example, the 1975-79 arrivals from Central and South America and Mexico are more dispersed than their 1965-69 counterparts, while the reverse pattern holds for the Cubans. The Asians and Europeans who arrived in the later years are moderately more dispersed than the earlier

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[18]Although the Cuban native sample is very small, we can tentatively infer that PFORB is not a factor in the location choices of this group, nor are the economic variables themselves. For the Cuban immigrants, however, PFORB was significant and WAGE was positive with a t-value of 1.3.

arrivals. It was possible to study the change that took place between 1970 and 1980 in the degree of concentration of the 1965-69 immigrants. With the exception of the Mexicans and the Cubans, there is evidence of a moderate increase in dispersion.

2. Probably the main lesson from this study is the diverse behavior of the various immigrant groups. As we have seen, the five ethnic groups that were studied are quite distinct from each other in their location choices as well as the determinants of those choices. If we strive to draw general conclusions about the location choice behavior of the new immigrants to the United States, about the only thing that can be said is that all of the immigrants prefer to live in cities where their fellow countrymen are already located but this relationship is much weaker for the more educated immigrants. In terms of forecasting which areas of the country are likely to be most affected by the influx of immigrants, a question posed in the Introduction, the answer is that those cities with large foreign-born populations will continue to attract the new immigrants of the same ethnicity.

3. The second question raised in the Introduction,, i.e., whether immigrants learn about economic opportunities as they spend time in this country, requires an ambiguous answer. First, with the exception of the Mexicans, the immigrants who arrived in the late 1960s did tend to relocate by 1980 to cities that were more distant from their home countries. This is consistent with the notion that experience in the U.S. enables the immigrant to learn about opportunities in different parts of the country. But the second response to the question requires an examination of the change in the importance of the expected wage variable in predicting location choice. Only for the Asians, and to some extent, the

Central and South Americans, is there evidence that the 1960s arrivals did relocate by 1980 to cities with more attractive labor market opportunities.

4. Within each ethnic group, there is evidence of significant differences in the behavior of the 1965-69 and 1975-79 cohorts. The Asians who arrived between 1975 and 1979 were found to be more responsive or more knowledgeable about relative economic opportunities than the 1960s arrivals. For the Mexicans, Cubans and Europeans, however, the expected wage variable became negative for the 1975-79 arrivals. These results are remarkably consistent with Chiswick's work on immigrants and indicate an increase over time in the quality of Asian immigrants, and a decrease in the quality of Mexican, Cuban and European immigrants.

5. Finally, the immigrants were compared to natives of similar ethnicity in order to gauge the relative importance of ethnicity and birthplace in determining location choice. It was shown that the native ethnic groups are more dispersed throughout the U.S. than the immigrants and, with the exception of the Asians, the equations estimated for the natives differ sharply from those for the immigrants. Only in the case of the Asians can we conclude that ethnicity is an important determinant of the location choice behavior of the immigrant groups.

BIBLIOGRAPHY

Borjas, G., "Assimilation, Changes in Cohort Quality, and the Earnings
of Immigrants," Journal of Labor Economics, October 1985.

Buehler, M. H., "Voter Turnout and Political Efficacy Among Mexican
Americans in Michigan," Sociology Quarterly, 1977.

Chiswick, B. R., "The Effect of Americanization on the Earnings of
Foreign-Born Men," Journal of Political Economy, Vol. 86, 1978.

_____, "The Economic Progress of Immigrants: Some Apparently
Universal Patterns," in Contemporary Economic Problems, ed. W.
Fellner, American Enterprise Institute, 1979.

_____, "Is the New Immigration Less Skilled than the Old?" Journal
of Labor Economics, April 1986.

DeFreitas, G., The Earnings of Immigrants in the American Labor Market,
unpublished Ph.D. dissertation, Columbia University, 1979.

_____, "Ethnic Differentials in Unemployment Among Hispanic
Americans," mimeo, Columbia University, 1982.

Dunlevy, J. A., "Nineteenth-Century European Immigration to the United
States: Intended versus Lifetime Settlement Patterns," Economic
Development and Cultural Change, October 1980.

Fields, G., "Place to Place Migration," Review of Economics and Statis-
tics, February 1979.

Fitzpatrick, G. L. and M. J. Modlin, Direct-Line Distances -- Inter-
national Edition, Metuchen: The Scarecrow Press, Inc., 1986.

Greenwood, M. J., "Research on Internal Migration in the United States:
A Survey," Journal of Economic Literature, June 1975.

_____, "An Analysis of the Determinants of Geographic Labor
Mobility in the United States," Review of Economics and Statistics,
May 1969.

Jaffe, A. J. and Cullen, R. M., "Fertility of the Puerto Rican Origin
Population," International Migration Review, 1975.

Kritz, M. M. and Gurak, D. T., "Ethnicity and Fertility in the U.S.: An
Analysis of 1970 Public Use Sample Data," Review of Public Data Use,
1976.

Lowry, I. S., Migration and Metropolitan Growth: Two Analytical Models,
San Francisco: Chandler Publishing, 1966.

McFadden, D., "Conditional Logit Analyses of Qualitative Choice Behavior," in Frontiers of Econometrics, P. Larembka, ed., New York: Academic Press, 1973.

Massey, D., "Residential Segregation of Spanish Americans in United States Urbanized Areas," Demography, Vol. 16, 1979.

U.S. Department of Health, Education and Welfare, Public Assistance Statistics, Washington, D.C., 1970 and 1980.

_____, "Hispanic Residential Segregation: A Comparison of Mexicans, Cubans and Puerto Ricans," Sociology and Social Research, Vol. 65, 1981.

Vasegh-Daneshvary, N., Herzog, H. and Schlottman, A., "College-Educated Immigrants in the American Labor Force: A Study of Locational Behavior," University of Tennesses, mimeo, 1985.