NBER WORKING PAPER SERIES

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Working Paper No. 3423

NATIONAL BUREAU OF ECONOMIC RESEARCH
1050 Massachusetts Avenue
Cambridge, MA 02138
August 1990

NBER Working Paper #3423
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**ABSTRACT**

This paper presents an empirical analysis of immigrant participation in the welfare system using the 1970 and 1980 U.S. Censuses. The availability of two cross-sections allows for identification of cohort and assimilation effects. The data indicate that recent immigrant cohorts use the welfare system more intensively than earlier cohorts. In addition, the longer an immigrant household has been in the United States, the more likely it is to receive welfare. The analysis also suggests that a single factor, the changing national origin mix of the immigrant flow, accounts for much of the increase in welfare participation rates across successive immigrant waves.

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# IMMIGRANT PARTICIPATION IN THE WELFARE SYSTEM

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The large and growing waves of immigrants entering the United States in the past few decades have spurred an enormous amount of research assessing the economic contribution made by these new Americans. Extensive research has been conducted on many aspects of the labor market performance of immigrants, including earnings, employment, labor force participation, and occupational attainment.[1] These studies can be interpreted as an attempt to measure the "benefits" provided by immigrant manpower to the U.S. economy. Although some researchers have analyzed the impact of immigrants on native earnings and employment opportunities, much less effort has been devoted to evaluating other "costs" that immigrants potentially impose upon natives.[2] We examine a particularly striking and controversial example of these costs: immigrant participation in the welfare system.

The conflict between immigration and the existence of a welfare state raises questions of fundamental importance for social policy. There is a widespread perception that unskilled immigrants are particularly prone to enter the welfare system, and that the entry of large numbers of these immigrants in the past two decades has increased taxpayer expenditures on income transfer programs.[3] There is also the fear that a relatively generous welfare system increases the attractiveness of immigration to the United States, particularly for those persons most likely to use the available benefits. After all, the income opportunities available through the U.S. welfare system are sometimes better than the typical income opportunities available in many source countries. For instance, in 1980,

per capita GNP in the Philippines was under $700, and in Mexico it was approximately $1900, as compared to the average welfare receipts of about $2700 for an immigrant welfare household in the United States.[4]

Despite the critical importance of this issue for policy purposes, little is currently known about immigrant participation in transfer programs, and especially about how this participation has changed over time. Two recent studies use cross-section microdata to compare how immigrant and native families differ in their propensity to receive transfer payments. Using the 1976 Survey of Income and Education, Blau (1984) finds that immigrant families are less likely to participate in the welfare system than demographically comparable native families, and her findings are replicated in the 1980 Census data analyzed by Tienda and Jensen (1986).[5] Among families receiving public assistance, Blau also finds the level of welfare receipts to be roughly the same in immigrant and native households. These authors conclude that immigrants do not disproportionately burden the income transfer system.

While suggestive of empirical regularities, these studies suffer from the methodological problem that a single cross-section of data cannot distinguish between aging and cohort effects.[6] Hence the existing literature provides no evidence as to whether recent immigrant cohorts are more likely to receive welfare than earlier cohorts, or how welfare participation behavior evolves over time as a given cohort assimilates in the United States. These cohort and assimilation effects have proven to be important factors influencing immigrant skills and earnings (Borjas 1985), so it is likely that they also play a significant role in determining immigrant welfare participation.[7]

This paper presents a systematic empirical analysis of immigrant participation in the welfare system using the 1970 and 1980 U.S. Censuses. The availability of two cross-sections allows us to separately identify cohort and assimilation effects, and this approach yields a more meaningful description of the patterns of immigrant welfare recipiency than has been provided by previous research.

## Data and Descriptive Analysis

To provide a background for the study, we begin by presenting descriptive statistics summarizing welfare use by immigrants. We use data drawn from the 1970 2/100 U.S. Census (obtained by pooling the 5% SMSA and County Group Sample and the 5% State Sample) and the 1980 5/100 A file of the U.S. Census.[8] The analysis is restricted to households not residing in group quarters and headed by individuals who are at least 18 years of age.

The household is the unit of observation.[9] We use the Census definition of public assistance income, which includes cash receipts under such programs as Aid to Families with Dependent Children, Supplemental Security Income (which includes old-age assistance, aid to the blind, and aid to the permanently and totally disabled), and general assistance. This definition specifically excludes social security income, permanent disability insurance payments, medicare payments, and unemployment insurance benefits. A household is defined to be on welfare if anyone in the household received public assistance income in the calendar year prior to the Census.

The native or immigrant status of a household is determined according to

the country of birth of the household head. For immigrant households, the year of migration of the head is used to allocate the household to a specific immigrant cohort. While not without potential problems, this method of defining household immigrant status is straightforward and ensures comparability with previous analyses of immigrant welfare participation.

Table 1 compares the welfare participation rates of immigrants and natives, and also documents how welfare participation varies across immigrant cohorts. Welfare participation rates are presented for all households, as well as separately for male-headed and female-headed households. Overall, welfare participation rates increased between 1970 and 1980 for both immigrants and natives. However, the rate of increase was much greater in the immigrant population. In 1970, the welfare participation rate of immigrant households was slightly lower than that of native households, while in 1980 welfare participation was almost a full percentage point higher for immigrants than for natives.

This pattern of increasing welfare recipiency by immigrants occurs among both male-headed and female-headed households. For instance, in 1970 male-headed immigrant households were only .8 percentage points more likely to receive welfare than male-headed native households, while by 1980 the differential in welfare use had jumped to 1.7 percentage points. Similarly, the welfare participation rate of female-headed immigrant households was 4.4 percentage points below that of their native counterparts in 1970, but only 1.5 percentage points below in 1980. Evidently, immigrant welfare dependency was on the rise during this decade, both in absolute terms and relative to natives.

Table 1 also demonstrates that welfare participation within the

TABLE 1

Welfare Participation Rates of Native and Immigrant Households

Percentage of Households Receiving Welfare

| Census Year/ Group | Natives | All Immigrants | Year of Immigration | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | 1975-80 | 1970-74 | 1965-69 | 1960-64 | 1950-59 | Before 1950 |
| 1970: | | | | | | | | |
| All Households | 6.1 (57,962) | 5.9 (88,140) | - | - | 5.5 (9,134) | 6.5 (7,697) | 5.0 (14,621) | 6.2 (56,688) |
| Male-Headed Households | 3.7 (45,692) | 4.5 (66,482) | - | - | 4.4 (7,770) | 4.9 (6,446) | 3.6 (12,284) | 4.7 (39,982) |
| Female-Headed Households | 14.8 (12,270) | 10.4 (21,658) | - | - | 11.7 (1,364) | 14.5 (1,251) | 12.4 (2,337) | 9.7 (16,706) |
| 1980: | | | | | | | | |
| All Households | 7.9 (72,024) | 8.8 (296,175) | 8.3 (41,212) | 8.4 (38,082) | 10.2 (35,161) | 9.2 (28,479) | 7.1 (49,035) | 9.3 (104,206) |
| Male-Headed Households | 4.8 (51,950) | 6.5 (212,698) | 6.9 (33,906) | 5.8 (30,626) | 7.1 (27,046) | 6.3 (21,561) | 4.8 (36,869) | 7.3 (62,690) |
| Female-Headed Households | 16.2 (20,074) | 14.7 (83,477) | 14.6 (7,306) | 19.1 (7,456) | 20.5 (8,115) | 18.4 (6,918) | 14.1 (12,166) | 12.3 (41,516) |

Note: The sample sizes are given in parentheses.

immigrant population varies significantly across cohorts, with more recent arrivals having higher welfare participation rates than earlier immigrant cohorts at the same stage of the assimilation process. For instance, the most recent immigrant households in the 1970 data, 1965-1969 arrivals, had an overall welfare participation rate of only 5.5 percent. In the 1980 Census, however, the most recent immigrant households, those who came between 1975 and 1980, had a welfare participation rate of 8.3 percent. This 2.8 percentage point increase in the welfare participation rate across immigrant cohorts exceeds the corresponding increase of 1.8 percentage points experienced by native households over the decade. Therefore, the 1975-1980 immigrant cohort uses the welfare system more intensively than the 1965-1969 cohort, after controlling for years since migration and the secular rise in welfare recipiency among natives.

Other comparisons between earlier and more recent immigrant cohorts yield the same conclusion. For example, in 1970 the welfare participation rate of immigrants who arrived between 1950 and 1959, and hence have been in the United States between 10 and 20 years, was 5.0 percent. In 1980, however, the welfare participation rate of immigrants with 10-20 years of residence in this country was between 9 and 10 percent, once again a much larger increase in welfare recipiency than that experienced by natives. Similar patterns also emerge from the data disaggregated by sex of the household head.

These findings suggest that the increase in immigrant welfare participation between 1970 and 1980 is partly due to the arrival of cohorts with higher welfare propensities than the older cohorts they are replacing. However, it is also the case that, for a given immigrant cohort, welfare

participation increases with the amount of time the cohort has spent in the United States. In order to document this assimilation effect, Table 2 tracks the welfare participation of corresponding age/cohort groups across the 1970 and 1980 Censuses. This enables us to observe how the welfare recipiency rate of a given group of immigrants changed over the decade.[10] By comparing the change for immigrants with the corresponding change for natives, it becomes clear that immigrant welfare participation increased with age by a greater amount than did the welfare participation of natives.

For instance, natives aged 18-34 in 1970 had a welfare participation rate of 5.2 percent, whereas the rate was 6.5 percent for this same group of natives in 1980, when they were between the ages of 28 and 44. This amounts to an increase in welfare participation of 1.3 percentage points over the decade for these natives. The analogous increase was 4.3 percentage points for immigrants in the same age interval who arrived in this country between 1965 and 1969. Therefore the effect of aging on welfare participation was much larger for this immigrant cohort than for a comparable group of natives. By using different age groups or different immigrant cohorts, various comparisons can be made from Table 2, and in general the same conclusion emerges: welfare participation increases with age more rapidly for immigrants than for natives. This pattern is less prevalent in the middle-aged sample, whereas it is strongest for the oldest age group, although sample attrition because of death may affect the results for this latter group. The bottom two panels of Table 2 repeat these calculations separately for male-headed and female-headed households, with similar results.

To complete our descriptive analysis, Table 3 reveals sizable variation

TABLE 2
The Impact of Aging on Welfare Participation Rates

Percentage of Households Receiving Welfare

| Age Group/ Census Year | Natives | All Immigrants | Year of Migration | | | |
|---|---|---|---|---|---|---|
| | | | 1965-69 | 1960-64 | 1950-59 | Before 1950 |
| A. All Households | | | | | | |
| 18-34 in 1970 | 5.2 | 3.9 | 3.2 | 4.3 | 4.8 | 3.5 |
| 28-44 in 1980 | 6.5 | 6.9 | 7.5 | 7.3 | 5.8 | 6.6 |
| 35-49 in 1970 | 4.5 | 4.5 | 5.8 | 5.4 | 4.1 | 3.8 |
| 45-59 in 1980 | 7.2 | 7.3 | 10.1 | 8.8 | 6.2 | 6.4 |
| 50+ in 1970 | 7.5 | 6.8 | 12.2 | 13.3 | 6.5 | 6.5 |
| 60+ in 1980 | 10.8 | 11.0 | 27.1 | 19.5 | 11.0 | 10.0 |
| B. Male-Headed Households | | | | | | |
| 18-34 in 1970 | 2.5 | 2.6 | 2.4 | 2.9 | 2.8 | 2.4 |
| 28-44 in 1980 | 3.3 | 4.2 | 4.8 | 4.6 | 3.3 | 3.5 |
| 35-49 in 1970 | 2.8 | 3.4 | 4.6 | 4.5 | 3.0 | 2.5 |
| 45-59 in 1980 | 4.8 | 5.6 | 8.2 | 6.8 | 4.5 | 4.6 |
| 50+ in 1970 | 5.3 | 5.4 | 10.8 | 10.7 | 5.2 | 5.0 |
| 60+ in 1980 | 7.9 | 9.1 | 21.7 | 14.7 | 8.4 | 8.3 |
| C. Female-Headed Households | | | | | | |
| 18-34 in 1970 | 20.3 | 11.5 | 8.1 | 12.2 | 16.0 | 9.7 |
| 28-44 in 1980 | 18.4 | 16.7 | 17.6 | 16.9 | 15.0 | 17.5 |
| 35-49 in 1970 | 15.9 | 11.1 | 13.1 | 11.0 | 11.0 | 10.3 |
| 45-59 in 1980 | 15.7 | 12.9 | 16.1 | 15.5 | 11.7 | 11.3 |
| 50+ in 1970 | 12.9 | 10.8 | 17.9 | 22.3 | 11.6 | 9.7 |
| 60+ in 1980 | 14.9 | 13.8 | 37.7 | 29.0 | 16.4 | 12.3 |

TABLE 3

Immigrant Welfare Participation Rates in 1980, by Country of Origin

| Country | All Households | | Female-Headed Households | | Male-Headed Households | |
|---|---|---|---|---|---|---|
| | % on Welfare | Sample Size | % on Welfare | Sample Size | % on Welfare | Sample Size |
| Europe: | | | | | | |
| Austria | 6.9 | 4085 | 10.2 | 1766 | 4.4 | 2319 |
| Czechoslovakia | 5.7 | 3206 | 7.0 | 1137 | 5.0 | 2069 |
| Denmark | 4.0 | 1172 | 6.5 | 353 | 2.9 | 819 |
| France | 6.1 | 2551 | 9.0 | 1036 | 4.2 | 1515 |
| West Germany | 4.7 | 18821 | 7.4 | 6766 | 3.2 | 12055 |
| Greece | 6.3 | 5060 | 12.9 | 908 | 4.9 | 4152 |
| Hungary | 6.3 | 4316 | 9.3 | 1458 | 4.8 | 2858 |
| Ireland | 6.4 | 5069 | 9.9 | 2116 | 3.9 | 2953 |
| Italy | 7.3 | 22412 | 12.1 | 6004 | 5.6 | 16408 |
| Netherlands | 4.1 | 2720 | 7.8 | 642 | 3.0 | 2078 |
| Norway | 5.9 | 1829 | 8.6 | 579 | 4.6 | 1250 |
| Poland | 6.3 | 11880 | 9.1 | 4080 | 4.9 | 7800 |
| Portugal | 8.0 | 3474 | 21.1 | 508 | 5.7 | 2966 |
| Romania | 7.7 | 1778 | 11.5 | 480 | 6.3 | 1298 |
| Spain | 13.4 | 1592 | 19.8 | 334 | 11.8 | 1258 |
| Sweden | 5.5 | 2213 | 8.5 | 777 | 3.8 | 1436 |
| Switzerland | 3.9 | 1149 | 7.1 | 339 | 2.6 | 810 |
| United Kingdom | 5.4 | 15147 | 9.2 | 5641 | 3.2 | 9506 |
| USSR | 8.9 | 12589 | 11.6 | 4564 | 7.3 | 8025 |
| Yugoslavia | 6.1 | 3989 | 11.2 | 920 | 4.6 | 3069 |
| Asia and Africa: | | | | | | |
| China | 8.7 | 6453 | 15.0 | 994 | 7.5 | 5459 |
| Egypt | 6.0 | 1050 | 15.3 | 131 | 4.7 | 919 |
| India | 2.4 | 4307 | 6.5 | 294 | 2.1 | 4013 |
| Iran | 2.3 | 2557 | 6.8 | 336 | 1.7 | 2221 |
| Israel | 4.7 | 1473 | 9.6 | 219 | 3.8 | 1254 |
| Japan | 5.1 | 3806 | 9.0 | 1266 | 3.2 | 2540 |
| Korea | 6.1 | 3340 | 8.4 | 702 | 5.5 | 2638 |
| Philippines | 10.6 | 8099 | 12.2 | 1681 | 10.2 | 6418 |
| Vietnam | 29.3 | 2587 | 39.1 | 478 | 27.1 | 2109 |
| Western Hemisphere: | | | | | | |
| Argentina | 6.1 | 1416 | 13.2 | 265 | 4.5 | 1151 |
| Brazil | 5.9 | 713 | 9.9 | 181 | 4.5 | 532 |
| Canada | 6.3 | 20094 | 11.1 | 6952 | 3.8 | 13142 |
| Colombia | 8.7 | 2630 | 15.8 | 673 | 6.3 | 1957 |
| Cuba | 18.0 | 12758 | 31.7 | 2882 | 14.0 | 9876 |
| Domin. Rep. | 25.8 | 3207 | 41.0 | 1473 | 12.8 | 1734 |
| Ecuador | 11.5 | 1551 | 30.2 | 364 | 5.8 | 1187 |
| Guatemala | 9.1 | 1088 | 17.7 | 317 | 5.6 | 771 |
| Haiti | 10.3 | 1726 | 17.5 | 584 | 6.7 | 1142 |
| Jamaica | 7.9 | 3845 | 12.1 | 1616 | 4.9 | 2229 |
| Mexico | 12.4 | 38774 | 29.3 | 7036 | 8.7 | 31738 |
| Panama | 11.5 | 1195 | 20.3 | 492 | 5.4 | 703 |
| Trin. & Tobago | 9.1 | 1348 | 15.1 | 542 | 5.1 | 806 |

in welfare participation across immigrants originating in different countries. For instance, overall welfare participation rates range from as low as 2.3 percent for households immigrating from Iran to over 25 percent for Vietnamese and Dominican households. The dispersion is even more striking among female-headed households. The welfare participation rate of households whose female head was born in Denmark is 6.5 percent, while the corresponding rate for female-headed households from Mexico is 29.3 percent, and that for female-headed households originating in the Dominican Republic is 41.0 percent. The data indicate that immigrant households from the Latin American and Asian countries that account for much of recent U.S. immigration tend to have relatively high rates of welfare use.[11] This suggests that the pattern of increased welfare participation by recent immigrant cohorts may be at least partly due to changes in the country of origin composition of the immigrant flow, and this issue will be examined in greater detail below.

## Cross-Section Estimates

To facilitate comparisons with previous work and also to provide a benchmark for the analysis that follows, we first present cross-section estimates of the determinants of household welfare participation. Table 4 reports logit estimates of welfare participation probabilities using the 1980 Census.[12] The independent variables in column 1 include age and sex of the household head, age squared, and a vector of dummy variables indicating immigrant status and year of arrival. In column 2 we add controls for the education, marital status, health, and racial/ethnic background of the

TABLE 4
Logit Estimates of Welfare Participation Propensities:
1980 Cross-Section

| Variable | (1) Coefficient | (1) dP/dX | (2) Coefficient | (2) dP/dX |
|---|---|---|---|---|
| Age | .0142*** (4.19) | .0011 | .0362*** (9.26) | .0029 |
| Age Squared | .00004 (1.37) | .000003 | -.0004*** (-9.76) | -.00003 |
| Migrated 1975-80 | .4167*** (10.68) | .0334 | -.0484 (-1.05) | -.0039 |
| Migrated 1970-74 | .3588*** (9.09) | .0288 | -.2792*** (-6.06) | -.0224 |
| Migrated 1965-69 | .4793*** (12.78) | .0385 | -.0252 (-.58) | -.0020 |
| Migrated 1960-64 | .3152*** (7.64) | .0253 | -.0486 (-1.04) | -.0039 |
| Migrated 1950-59 | -.0500 (-1.37) | -.0040 | -.1198*** (-2.97) | -.0096 |
| Migrated Before 1950 | -.3655*** (-11.78) | -.0293 | -.4405*** (-13.00) | -.0354 |
| Female-Headed Household | .9687 (47.04) | .0777 | .6505*** (21.15) | .0522 |
| Black | - | | .9167*** (24.70) | .0736 |
| Hispanic | - | | .8201*** (26.66) | .0658 |
| Asian | - | | .7929*** (18.57) | .0636 |
| Controls for Demographic Variables | No | | Yes | |
| -2 Log Likelihood | 74462.8 | | 65394.9 | |
| Sample Size | 133,374 | | 133,374 | |

Note: The t-statistics are presented in parentheses. The marginal impacts dP/dX are evaluated at the mean 1980 welfare participation probability in the immigrant sample, which is .088. The additional standardizing variables used in column 2 are: education, marital status, and health of the household head; the number of children in the household aged 0-5, 6-11, and 12-17; the number of persons aged 65 or over; the number of disabled persons; household size; and whether the household resides in a metropolitan area.

* Statistically significant at the .10 level; ** at the .05 level; *** at the .01 level (two-tailed tests).

household head, as well as variables identifying whether the household resides in a metropolitan area, the number of children aged 0-5, 6-11, and 12-17 in the household, the number of persons aged 65 or more in the household, the number of disabled persons in the household, and household size. For the sake of brevity, we do not report the coefficients for most of these control variables.

The results in Table 4 are similar to previous cross-section estimates by Blau (1984) and Tienda and Jensen (1986). Households headed by white females or minority males are roughly from 5 to 7 percentage points more likely to receive public assistance than are households headed by white males, and welfare participation also increases with the age of the household head. More directly relevant to the present study, most immigrant cohorts display greater welfare participation than natives when only the age and sex of the head are held constant, but once we control for other household characteristics this pattern is reversed. Other than the tendency for welfare use to be lowest for those immigrants who arrived before 1950, immigrant welfare participation does not appear to vary systematically with years since migration. Qualitatively similar results (not shown) were obtained from logits estimated separately for male-headed and female-headed households and from logits estimated on the 1970 Census cross-section.

## Pooled Estimates

We now examine how immigrant welfare participation differs across immigrant cohorts and evolves for a specific immigrant cohort as the cohort assimilates in the United States. By tracking immigrant cohorts across

successive censuses, it is possible to separately identify cohort and assimilation effects (Borjas 1985, 1987). Pooling immigrant and native households from both the 1970 and 1980 Censuses, we estimate the following logit specification of $P_i$, the probability that household i receives public assistance:

$$(1) \qquad \log [P_i/(1-P_i)] = X_i\delta + \alpha_1 y_i + \alpha_2 y_i^2 + \sum_t \beta_t C_{ti} + \gamma\pi_i + \epsilon_i$$

The vector X includes the same control variables that were used in the cross-section estimates. For immigrants, y represents the number of years the head has resided in the United States, while for natives y is set equal to zero. Because the household head's age is held constant in the vector X, the coefficients $\alpha_1$ and $\alpha_2$ measure the effect of assimilation on immigrant welfare participation. The vector of dummy variables C indicates the calendar year of migration of the household head, and these dummies are set equal to zero for natives. The coefficient vector $\beta$, therefore, represents the cohort effects. Finally, the variable $\pi$ is set equal to one if the observation is drawn from the 1980 Census, and zero otherwise, and its coefficient $\gamma$ measures the period effect.

Equation (1) imposes the restriction that the period effect on welfare participation rates experienced by immigrants is identical to the period effect for natives. This restriction is necessary in order to separately identify the assimilation and cohort effects.[13] By appropriate definition of the native-born sample to be included in the regressions, it is easy to allow for alternative specifications of the immigrant period effect. In preliminary work, we tried a number of possibilities, and our results were

not affected by this experimentation. Throughout the analysis, therefore, the native base will be a random sample of all native U.S. households (which was the same native base used in the cross-section estimates). For simplicity and computational tractability, equation (1) also restricts the impact of the demographic variables X to be the same for immigrants and natives.

Table 5 reports estimates of equation (1) from the pooled data. Column 1 presents the simplest specification in which the control vector X includes only the sex of the household head and a quadratic in the head's age. This specification summarizes the aging, cohort, and period effects in the raw data, and may be the most relevant for calculating the costs added to the welfare system by immigration. Given that the family reunification emphasis of current U.S. immigration law prevents authorities from selecting among potential immigrants based on observable socioeconomic characteristics, what matters for policy purposes is whether immigrants are more likely to receive welfare than natives, and not whether they are more likely to receive welfare than demographically comparable natives. However, we also provide estimates in column 2 that control for the full range of demographic variables.

The coefficient of the dummy variable indicating if the observation is drawn from the 1980 Census, which captures the period effect, is always positive and significant. The typical household in the 1980 Census was 1-2 percentage points more likely to receive welfare payments than the typical household in the 1970 Census. This result probably reflects the increased availability of transfer payments in the 1970s (U.S. Bureau of the Census, 1980, p. 354).

TABLE 5

Logit Estimates of Welfare Participation Propensities:
Pooled 1970 and 1980 Data

| Variable | (1) Coefficient | (1) dP/dX | (2) Coefficient | (2) dP/dX |
|---|---|---|---|---|
| Age | .0019 | .0002 | .0123*** | .0010 |
| | (.71) | | (4.00) | |
| Age Squared | .0002*** | .00002 | -.0001*** | -.00001 |
| | (6.66) | | (-3.77) | |
| Years Since Migration | .0180*** | .0014 | .0376*** | .0030 |
| | (3.14) | | (6.15) | |
| Years Since Migration Squared | -.0002*** | -.00002 | -.0008*** | -.00006 |
| | (-2.67) | | (-9.54) | |
| Migrated 1975-80 | .3635*** | .0292 | -.1021** | -.0082 |
| | (9.37) | | (-2.31) | |
| Migrated 1970-74 | .2277*** | .0183 | -.5002*** | -.0401 |
| | (4.35) | | (-8.69) | |
| Migrated 1965-69 | .2422*** | .0194 | -.3478*** | -.0279 |
| | (4.31) | | (-5.62) | |
| Migrated 1960-64 | .1111 | .0089 | -.4385*** | -.0352 |
| | (1.44) | | (-5.30) | |
| Migrated 1950-59 | -.3288*** | -.0264 | -.5906*** | -.0474 |
| | (-3.20) | | (-5.42) | |
| Migrated Before 1950 | -.7984*** | -.0641 | -.7106*** | -.0570 |
| | (-4.95) | | (-4.15) | |
| Female-Headed Household | .9611*** | .0771 | .6093*** | .0489 |
| | (59.60) | | (24.50) | |
| Black | - | | .9981*** | .0801 |
| | | | (33.19) | |
| Hispanic | - | | .9955*** | .0800 |
| | | | (41.72) | |
| Asian | - | | .8158*** | .0655 |
| | | | (22.42) | |
| 1980 Census | .2129*** | .0171 | .1093*** | .0088 |
| | (6.71) | | (3.20) | |
| Controls for Demographic Variables | No | | Yes | |
| -2 Log Likelihood | 125307.4 | | 110805.0 | |
| Sample Size | 250,527 | | 250,527 | |

Note: The t-statistics are presented in parentheses. The marginal impacts dP/dX are evaluated at the mean 1980 welfare participation probability in the immigrant sample, which is .088. The additional standardizing variables used in column 2 are: education, marital status, and health of the household head; the number of children in the household aged 0-5, 6-11, and 12-17; the number of persons aged 65 or over; the number of disabled persons; household size; and whether the household resides in a metropolitan area.

* Statistically significant at the .10 level; ** at the .05 level; *** at the .01 level (two-tailed tests).

The cohort variables in Table 5 document several important facts about immigrant welfare participation. The coefficients of these variables measure the differential in welfare participation rates between immigrants and natives at the time of immigration (i.e., when the years since migration variable equals zero), and also describe the pattern of welfare recipiency across immigrant cohorts. Unlike the cross-section estimates, there is now a clear pattern as to how immigrant welfare participation varies with time of arrival. Regardless of which set of standardizing variables is used, recent immigrant cohorts are more likely than earlier immigrant cohorts, at any given tenure of U.S. residence, to be welfare recipients. This cohort effect is sizable. In column 1, for example, the 1975-1980 cohort of immigrants has a welfare participation rate that is 1 percentage point higher than that of the 1965-1969 cohort, 2 percentage points higher than that of the 1960-1964 cohort, and almost 6 percentage points higher than that of the cohort which migrated in the 1950s.

These cohort effects persist in column 2, which implies that they are not solely due to demographic differences across immigrant waves. In column 2, the welfare participation rate of immigrants in the 1975-1980 cohort is 2 percentage points higher than that of the 1965-1969 cohort, about 3 points higher than that of the 1960-1964 cohort, and 4 points higher than that of the 1950-1959 cohort. It is noteworthy that the secular trends in welfare use across immigrant cohorts mirror the cohort effects on labor market earnings reported in Borjas (1985). Recent immigrant cohorts not only have lower earnings than earlier cohorts, but they also have higher welfare participation rates.[14]

Because the column 2 logits include a vector of variables indicating

the household's racial/ethnic background (black, Hispanic, or Asian, with whites as the omitted group), the coefficients on the immigrant cohort variables measure within race differentials in welfare participation rates between immigrant and native households. These standardized differentials imply that immigrant households from every cohort are less likely to receive welfare than demographically comparable native households. However, because nonwhite households have such high welfare recipiency rates, all cohorts of nonwhite immigrant households are more likely to receive welfare than otherwise similar white native households. For example, consider Hispanic immigrant households that arrived between 1965 and 1969. Although these households have a welfare participation rate that is almost 3 percentage points lower than that of Hispanic households native to the United States, this is more than offset by the fact that in general Hispanic households are 8 percentage points more likely to receive public assistance than white households, with the result that Hispanic immigrant households from the 1965-1969 cohort have welfare participation rates over 5 points higher than otherwise similar white native households. Given that immigrants are disproportionately nonwhite, controlling for race in these logits masks some of the welfare participation differences between a typical immigrant and a typical native.

The coefficients reported in Table 5 also document a strong assimilation effect on the use of welfare by immigrant households: the longer an immigrant household resides in the United States, the greater its chances of being on welfare, both in absolute terms and relative to native households. The estimated coefficients of the age and age squared variables indicate that welfare recipiency increases with the age of the household

head for both native and immigrant households, but the coefficients on the years since migration variables imply that immigrant welfare participation grows more rapidly with age than does native welfare participation. This assimilation effect is both numerically and statistically significant, and it becomes stronger in column 2 where detailed demographic controls are included.

Figure 1 illustrates the substantive importance of the assimilation effect. Using the estimates from column 1 of Table 5, we trace out lifetime welfare participation for all immigrant cohorts (as well as natives), assuming that immigrant households arrive in this country when the head is 20 years old.[15] In Figure 1, we graph the predicted differences in welfare participation rates between immigrants and natives over the life cycle, so that the horizontal line at zero represents native households. Because these are relative participation rates, they net out the effect of age on welfare participation that is common to both immigrants and natives. Therefore, the upward slope of the immigrant curves reflects the additional effect of aging on immigrant welfare participation due to assimilation.

Perhaps the most striking result in Figure 1 is the implication that all post-1950 immigrant cohorts will eventually have larger welfare propensities than native households. The graph also indicates that, towards the end of the life cycle, there is a very large differential in welfare participation rates between immigrants and native households for most immigrant cohorts. For instance, all the post-1960 immigrant cohorts have welfare participation rates that exceed those of natives by at least 3 percentage points after age 50.

What accounts for these large cohort and assimilation effects in

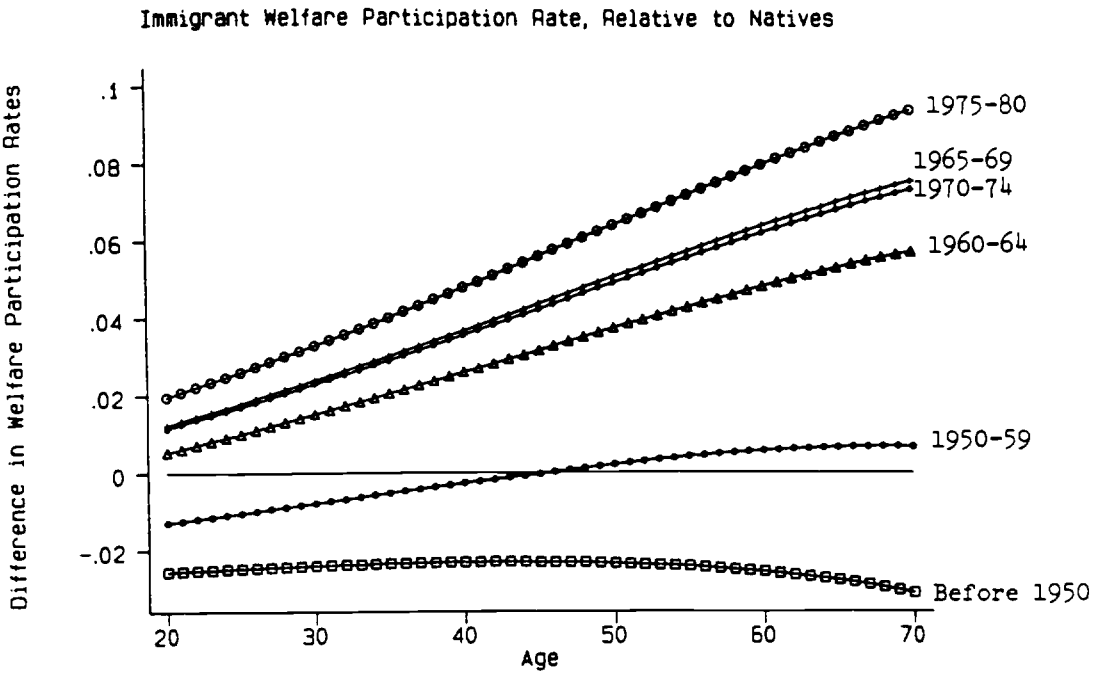
Immigrant Welfare Participation Rate, Relative to Natives
Difference in Welfare Participation Rates
.1
.08
.06
.04
.02
0
-.02
20
30
40
50
60
70
Age
1975-80
1965-69
1970-74
1960-64
1950-59
Before 1950

FIGURE 1

immigrant welfare participation? In the next section we demonstrate that the cohort effects are closely related to secular changes in the national origin mix of the immigrant flow. Before turning to this analysis, however, we first examine possible factors that could cause immigrant welfare participation to increase with duration of residence in the United States.

It is somewhat surprising that the process of assimilation leads immigrants into welfare rather than out of it, especially because assimilation tends to increase immigrant earnings. The increase in welfare participation as an immigrant cohort ages may be due to legal requirements, such as permanent legal residence or citizenship, which restrict the participation of recent immigrants in some welfare programs. Immigrants may also believe that their chances for naturalization (and hence for sponsoring the entry of relatives through the family preference system) are jeopardized if they receive welfare. Moreover, immigrants who become public charges in the first five years after arrival are liable for deportation, although this provision of the law is seldom enforced (U.S. Immigration and Naturalization Service, 1989, p. 119). Finally, it is also possible that immigrant assimilation involves the accumulation of information not only about labor market opportunities, but also about alternative opportunities available through the welfare system.

To the extent that institutional factors restrict immigrant welfare participation, most of the increase in welfare recipiency over time should occur as the immigrant passes through certain legal thresholds, such as the five-year residence period required for naturalization. To test this implication, Table 6 presents pooled welfare participation logits identical to those in Table 5 except that years since migration is entered as a set of

TABLE 6

Threshold Effects on Immigrant Assimilation
into the Welfare System

| Variable | (1) Coefficient | (1) dP/dX | (2) Coefficient | (2) dP/dX |
|---|---|---|---|---|
| 5-10 Years Since Migration | .2929*** (3.61) | .0235 | .1282 (1.50) | .0103 |
| 11-20 Years Since Migration | .2826*** (4.75) | .0227 | .3887*** (6.18) | .0312 |
| More than 20 Years Since Migration | .2676*** (3.16) | .0215 | .6860*** (7.63) | .0551 |
| Controls for Demographic Variables | No | | Yes | |
| -2 Log Likelihood | 125293.2 | | 110833.9 | |
| Sample Size | 250,527 | | 250,527 | |

Note: The t-statistics are presented in parentheses. The marginal impacts dP/dX are evaluated at the mean 1980 welfare participation probability in the immigrant sample, which is .088. The additional standardizing variables used in column 2 are: education, marital status, and health of the household head; the number of children in the household aged 0-5, 6-11, and 12-17; the number of persons aged 65 or over; the number of disabled persons; household size; and whether the household resides in a metropolitan area.

* Statistically significant at the .10 level; ** at the .05 level; *** at the .01 level (two-tailed tests).

dummy variables rather than as a quadratic. The coefficient on the dummy variable representing a given duration of residence interval measures welfare participation for these immigrants relative to immigrants with five or fewer years in the United States. Only these coefficients are reported, as the other coefficients remain substantially unchanged.

Table 6 suggests that the timing of the assimilation process depends on whether we control for detailed demographic characteristics. The column 1 estimates, which do not standardize for these variables, indicate that welfare participation rates jump by about two percentage points as immigrants go from five or fewer years of residence to 6-10 years, and welfare participation remains remarkably constant thereafter. This supports the notion that observed immigrant welfare assimilation is primarily due to legal restrictions associated with naturalization and the threat of deportation. However, the column 2 estimates, which include demographic control variables, lead to the opposite conclusion. Here welfare recipiency increases smoothly throughout the immigrant's lifetime.

To investigate this issue further, we estimated welfare participation logits separately for immigrants from each of the various cohorts, and included a variable indicating whether an immigrant had become naturalized. If legal restrictions are an important obstacle to immigrant welfare participation, then recipiency should be greater among those immigrants who have already obtained citizenship. We could detect no systematic relationship between welfare recipiency and citizenship status, and therefore tentatively conclude that, although legal restrictions associated with citizenship may account for some of observed immigrant welfare assimilation, these institutional factors do not provide a complete

explanation.

## Cohort Effects and National Origin

Because of changes in U.S. immigration policy and in political and economic conditions in the source countries, the postwar period has witnessed a remarkable shift in the national origin mix of the immigrant population. The magnitude of this shift is briefly summarized in Table 7, which presents the national origin mix of immigrants admitted in each decade between 1930 and 1980. During the Great Depression, a period in which the size of the immigrant flow was at a record low, nearly two thirds of the immigrants originated in Europe, and the remainder originated in the Western Hemisphere. By the 1950s, the fraction of persons originating in Europe had declined to about 40 percent, the fraction originating in the Americas increased to 40 percent, and the size of the Asian immigrant flow became non-trivial (6 percent of the immigrants). During the 1970s, the share of Europeans declined further to 18 percent, the share of Western Hemisphere immigrants was 44 percent, and Asian countries were responsible for about a third of the immigrant flow.

Earlier in this paper, we documented the huge dispersion that exists in welfare participation rates among national origin groups. The varying welfare dependency of national origin groups suggests that shifts in the source country composition of the immigrant flow may be responsible for the sizable cohort effects that have led to a secular increase in immigrant welfare participation.

We use the welfare participation behavior documented in the 1980 Census

TABLE 7

Origin of Legal Immigration Flows, 1931-1980

| Period: | Percent of Immigrant Flow Originating in: Africa | Asia | Western Hemisphere | Europe |
|---|---|---|---|---|
| 1931-1940 | .3 | 3.0 | 30.3 | 65.8 |
| 1941-1950 | .7 | 3.1 | 34.3 | 60.0 |
| 1951-1960 | .6 | 6.1 | 39.6 | 52.7 |
| 1961-1970 | .9 | 12.9 | 51.6 | 33.8 |
| 1971-1980 | 1.8 | 35.3 | 44.1 | 17.8 |

Source: U.S. Bureau of the Census (various years). The rows do not add to 100 percent because some immigrants originated in Oceania, and because the national origin of a small number of immigrants is unknown.

data to assess the importance of national origin in explaining these trends. Consider the following linear probability model:[16]

$$(2) \qquad D_{ij} = X_{ij}\beta + \sum_j \omega_j N_{ij} + \epsilon_{ij}$$

where $D_{ij}$ is a dummy variable indicating if household i from national origin group j receives welfare, the vector X contains standardizing variables, and the vector of dummy variables N indicates the country of origin of the household. For a native household, all the variables in the vector N are set equal to zero. Using the estimated coefficients of the dummy variables for the various national origin groups, it is then possible to predict the average welfare participation rate of immigrants (relative to natives) by weighting the coefficients by a particular national origin mix. Let $q_{jt}$ be the fraction of the immigrant population (or flow) in time t which originated in country j. For a given vector $\omega$ of estimated national origin differentials, the predicted welfare participation rate of the immigrant population (relative to natives) is given by:

$$(3) \qquad \Omega_t = \sum_j q_{jt}\,\omega_j$$

Table 8 summarizes the results of these calculations. We first estimate equation (2) without any standardizing variables, so that the coefficients of the dummy variables simply indicate the average welfare participation rate of each of the immigrant groups (relative to natives). Column 1 reports $\Omega_t$ calculated using this particular set of coefficients. If the national origin mix of the immigrant flow was given by that of the

TABLE 8

Predicted Welfare Participation Rates of Immigrants
(Relative to Natives) Under Alternative National Origin Distributions

| National Origin Mix | (1) | (2) | (3) | (4) |
|---|---|---|---|---|
| Stock of Foreign-Born in 1970 Census | -.0020 | -.0171 | -.0137 | -.0169 |
| Stock of Foreign-Born in 1980 Census | .0088 | .0022 | .0045 | -.0056 |
| 1950-1959 Flow | -.0009 | -.0132 | -.0102 | -.0156 |
| 1960-1964 Flow | .0182 | .0142 | .0155 | .0057 |
| 1965-1969 Flow | .0140 | .0123 | .0133 | .0045 |
| 1970-1974 Flow | .0208 | .0258 | .0263 | .0057 |
| 1975-1980 Flow | .0219 | .0263 | .0273 | .0109 |
| Holds Constant Age, Sex | No | Yes | Yes | Yes |
| Holds Constant Year of Immigration | No | No | Yes | Yes |
| Holds Constant Other Demographic Characteristics | No | No | No | Yes |

Note: The additional standardizing variables used in column 4 are: education, marital status, and health of household head; the number of children in the household aged 0-5, 6-11, and 12-17; the number of persons aged 65 or over; the number of disabled persons; household size; and whether the household resides in a metropolitan area.

stock of foreign-born persons residing in the United States in 1970, the immigrant welfare participation rate would be about -.2 percentage points below that of natives. However, if the national origin mix was given by that of the stock of foreign-born persons residing in the United States in 1980, immigrants would have a welfare welfare participation rate that is .9 percentage points above that of natives. In other words, the changing national origin mix between 1970 and 1980 would alone account for about a one percentage point increase in the welfare participation rate of immigrants. As revealed by the summary statistics in Table 1, this is roughly the size of the increase that actually occurred in the welfare participation rate of immigrants (relative to natives) during this period.

Even more dramatic increases in welfare participation rates due to shifts in the national origin mix of the immigrant flow are suggested by the remaining rows of Table 8, where the weights are the national origin mix of specific waves of immigrants (as opposed to the stock of foreign-born persons residing in the U.S. in any given Census year). For instance, an immigrant flow with the national origin mix of the 1950-1959 cohort leads to a welfare participation rate that is -.1 percent below that of natives. The national origin mix of the 1965-1969 cohort leads to a welfare participation rate that is 1.4 percentage points above that of natives, and the national origin mix of the 1975-1980 cohort leads to a welfare participation rate that is 2.2 percentage points above that of natives.

The remaining columns of Table 8 use alternative specifications of the control vector X in equation (2) to document changes in immigrant welfare participation behavior due to secular shifts in national origin. The simulations reveal that changes in the national origin mix of the immigrant

stock between 1970 and 1980 are responsible for an increase in the immigrant welfare participation rate of over 1 percentage point, regardless of the set of standardizing variables used. Our analysis, therefore, indicates that secular changes in the country of origin of U.S. immigrants go a long way toward explaining the increase in welfare recipiency among immigrant households observed in the postwar period.

## The Costs of Immigrant Participation in the Welfare System

Using the life cycle profiles of welfare participation behavior illustrated in Figure 1, it is possible to estimate the dollar costs of welfare participation by a typical immigrant household in each of the cohorts. The estimates from the first column of Table 5 allow us to predict the probability that a given household will receive welfare at any point in the life cycle. To keep the calculations simple, we assume that, once on welfare, an immigrant household receives the average $2727 (in 1979 dollars) of welfare income actually reported by such households in the 1980 Census. It is then relatively straightforward to calculate the expected present value of welfare costs for a given household in each immigrant cohort. We use a 5 percent rate of discount and assume that the household head resides in the United States from age 20 to 70.[17]

Table 9 summarizes the results of these calculations. Over its lifetime, the typical immigrant household which arrived between 1975 and 1980 will receive $7925 in welfare payments. Not only is this 71 percent higher than the lifetime welfare payment received by native households, it is also substantially higher than that received by previous immigrant

TABLE 9

Expected Welfare Costs Over the Life Cycle for a Typical Household

| Group | Costs (in 1979 dollars) |
|---|---|
| Natives | 4624 |
| Immigrants Who Arrived in: | |
| 1975-1980 | 7925 |
| 1970-1974 | 7016 |
| 1965-1969 | 7109 |
| 1960-1964 | 6312 |
| 1950-1954 | 4197 |
| Before 1950 | 2683 |

cohorts. For instance, it is 26 percent higher than the welfare income received by the 1960-1964 cohort, and 89 percent higher than that received by the 1950-1959 cohort.

To demonstrate the fiscal effects of the secular increase in welfare participation across immigrant cohorts, it is useful to calculate the aggregate costs associated with a particular cohort's welfare participation. For example, the 1980 Census enumerated 824,240 immigrant households that arrived in the United States between 1975 and 1980. Because, on average, each household receives a lifetime welfare income of $7925, the total welfare costs associated with this cohort are approximately $6.5 billion. A similarly-sized group of native households, however, would receive aggregate welfare payments of only $3.8 billion, while a similarly-sized group of immigrant households who arrived between 1950 and 1959 would have a welfare bill of only $3.5 billion. These calculations, therefore, suggest that there are substantial fiscal costs associated with the changing skills of the immigrant flow. The different welfare participation behavior of the 1950-1959 and the 1975-1980 immigrant cohorts is <u>alone</u> responsible for an increase of about $3 billion in welfare costs.

## Summary and Conclusion

This paper has presented a systematic empirical analysis of immigrant participation in the welfare system using the 1970 and 1980 Public Use Samples of the U.S. Census. In contrast to previous studies, we have focused on differences in welfare participation behavior across immigrant cohorts and countries of origin and over time as a single cohort

assimilates.

The main findings of the study are:

1. Recent immigrant cohorts are much more likely to enter the welfare system than earlier cohorts. This finding mirrors the result in the existing literature that more recent immigrant waves are less skilled than previous waves.

2. The longer an immigrant household has resided in the United States, the more likely it is to receive welfare. This aging effect is sufficiently strong so that after a decade or two in this country every immigrant cohort admitted in the postwar period has a higher rate of welfare recipiency than natives. The assimilation process, therefore, not only raises immigrant earnings in the labor market, but also leads to increased immigrant utilization of the alternative income opportunities available through the welfare system.

3. There is considerable dispersion in welfare participation rates across national origin groups. Among female-headed households, for example, immigrants originating in some countries have welfare participation rates exceeding 30 percent, while immigrants originating in other countries have welfare participation rates below 10 percent. Our analysis indicates that the historic shift in the national origin mix of the immigrant flow witnessed in the postwar period--with fewer immigrants originating in Europe and more now coming from Asia and Latin America--is mainly responsible for the secular rise in immigrant welfare participation.

4. The relatively high propensities of recent immigrant cohorts to enter the welfare system are associated with significant increases in the costs of income transfer programs. For instance, if the welfare

participation behavior of the 1975-1980 immigrant cohort were the same as that of the 1950-1959 cohort, the present value of welfare costs would be reduced by $3 billion.

Some observers (Simon 1989) have recently argued that immigration to the United States confers a net economic gain upon natives. However, mounting empirical research reveals that more recent immigrant cohorts are less skilled and less successful in the labor market than earlier cohorts (Borjas 1990). This means that many of the benefits provided by immigrant workers, such as tax revenues and human capital externalities, have been shrinking over time. Our research indicates that the welfare costs of immigration have been growing over time. Taken together, these trends are not necessarily inconsistent with the conjecture that immigrants are a net gain, but they do imply that the size of the gain has become smaller in recent years. Although the goal of immigration policy need not be to maximize economic gains to natives, the empirical evidence presented in this paper suggests that sizable costs are associated with policies that ignore the economic consequences of immigration.

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## NOTES

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1. Surveys of this literature are available in Greenwood and McDowell (1986) and Borjas (1990).

2. See Grossman (1982), Borjas (1986), Card (1990), Altonji and Card (1990), and LaLonde and Topel (1990) for estimates of the labor market effects of immigrants upon natives.

3. Simon (1989, Appendix B) discusses the results of public opinion surveys about immigrants and immigration.

4. The GNP statistics are obtained from U.S. Bureau of the Census (1985, p. 842), and the mean welfare income of immigrant households is calculated from the 1980 Census data described below.

5. Blau's work also analyzes immigrant participation in social insurance programs (such as Social Security), but we focus exclusively on public assistance programs. Simon (1984) examines the related question of whether the immigrant contribution to tax revenues exceeds the costs associated with their participation in the income transfer system. Simon concludes that immigration yields a net gain to the U.S. Treasury.

6. A recent discussion of this methodological problem is given by

Heckman and Robb (1983).

7. Recently, Jensen (1988) combined data from the 1970 and 1980 U.S. Censuses in an attempt to examine how immigrant welfare participation changed over the decade. However, because he failed to disentangle cohort and assimilation effects, his study is subject to the same shortcomings as the papers that relied on a single cross-section.

8. Because of the large number of natives in the raw data, we use a 1/1000 native sample for each of the Censuses.

9. Because the Census definition of a household includes all those residing in the same housing unit, Census households may be comprised of individuals from different families. The empirical analysis reported in this paper uses the Census definition of a household, but the analysis was also replicated excluding from the sample all individuals not related to the household head, and the results did not change.

10. Of course, the comparisons presented in Table 2 are affected by sample attrition due to death or emigration.

11. It is worth noting that the dispersion in welfare recipiency rates among national origin groups remains even after standardizing for a large set of demographic characteristics, including household size and years of residence in the United States. This fact is implicit in the results discussed below.

12. Because of the large sample sizes, we use random subsamples to estimate the maximum likelihood logits reported in this section and the next. The sampling fractions are: 50 percent of the data for natives; 100 percent of immigrants in the 1970 file; and 33 percent of immigrants in the 1980 file.

13. In the absence of this assumption, the variables indicating the year of immigration, the number of years of residence in the United States, and the dummy variable for the Census year would be perfectly collinear.

14. One variable not controlled for in these estimates is the generosity of the welfare system in the household's state of residence. Because benefit levels vary widely across states, and because immigrants are more geographically concentrated than natives (Bartel 1989), this might affect the results, especially if geographic concentration differs across immigrant cohorts. Unfortunately, we cannot correctly address this issue in the current paper, because in order to obtain an adequate number of observations for each immigrant cohort and country of origin we ended up using data from the 1970 Census that does not always identify state of residence. However, adding a vector of state dummy variables does not greatly affect the 1980 cross-section estimates reported in Table 4, so controlling for state effects probably would not change the pooled estimates in Table 5. Moreover, estimates which do not control for state of residence may be more relevant for policy calculations of how immigrant cohorts differ in terms of welfare costs.

15. The intercepts in Figure 1 represent cohort effects upon arrival in the U.S. (at age 20). They differ slightly from those reported in Table 5, however, both because of the non-linearity of the logit transformation and because dp/dX in Table 5 is estimated at the mean welfare participation rate of immigrants.

16. The regression includes a vector of 66 country dummies (for the countries with the largest immigrant flows in the postwar period), as well as an additional dummy representing all other source countries. It was

estimated by least squares because the very large sample size and the large number of regressors made maximum likelihood estimation impractical.

17. Of course, a more general analysis should provide a joint study of the welfare participation decision and of the level of welfare incomes to which immigrant households are entitled. Because we ignore the latter, the results reported in this section are best viewed as preliminary calculations of the welfare costs associated with immigration.