

# *Income Adequacy and Social Security Differences Between the Foreign-Born and U.S.-Born<sup>1</sup>*

Lee Cohen  
*Social Security Administration*

Howard Iams  
*Social Security Administration*

This paper projects retirement income and Social Security taxes and benefits among the foreign-born and U.S.-born in the United States. Focusing on the Depression and the late baby boom birth cohorts, we find that foreign-born persons have higher poverty rates than the U.S.-born, and as a group do not receive higher lifetime net benefits from Social Security than do the U.S.-born. However, persons from the late baby boom cohort who immigrated after 1969 have higher projected rates of return in Social Security than do U.S.-born persons of the same birth cohort.

## *INTRODUCTION*

This paper measures retirement income and Social Security taxes and benefits among the foreign-born and U.S.-born in the United States. The main findings are that foreign-born persons have higher poverty rates compared to the U.S.-born, and the foreign-born as a group do not receive higher lifetime net benefits from Social Security earnings than do the U.S.-born. An exception is post-1969 foreign-born persons born in the late baby boom. The paper presents background on the demographic differences between the foreign-born and U.S.-born persons that influence retirement income. It then discusses the main components of retirement income leading to a comparison of poverty between the foreign-born and U.S.-born. Finally the paper addresses individual gain in Social Security by looking at lifetime net benefits as a percent of lifetime earnings, and at the internal rate of return in the Social Security system.

The educational distribution of foreign-born persons is very different than the U.S.-born, with foreign-born persons overrepresented in the lowest

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and highest levels of the educational distribution (Farley, 1996:Fig. 5–8; Levy, 1998:112). Immigrants' educational composition varies greatly by region of birth, with, for example, Latin American immigrants much more likely to have limited education than the native-born population. In general, the jobs of foreign-born persons reflect their educational background (Farley, 1996:179–181).

Work life in the U.S. is expected to vary greatly between foreign-born persons and U.S.-born. Obviously, foreign-born persons can work in the U.S. only after they have immigrated, and persons immigrating later in life would have no U.S. earnings at younger ages. Many foreign-born persons start with low earnings in the U.S., but their earnings rapidly increase and approach the levels of U.S.-born residents with similar education levels as they remain longer in the U.S. (Duleep and Dowhan, 2002b). But over a lifetime, foreign-born persons would appear to have a distinctly different work history of yearly earnings in the U.S. than U.S.-born populations.

The rising levels of immigration have implications for future retirement age populations of Social Security beneficiaries in the twenty-first century. The lower educational levels of many foreign-born persons, and periods of reduced earnings relative to native-born populations, suggest that the socioeconomic characteristics of retired foreign-born people would differ from those of the U.S.-born retired. We might expect higher levels of poverty and lower retirement-age income among foreign-born persons than among the native-born.

The U.S. Social Security system bases benefits on lifetime earnings, so the benefits of foreign-born persons are expected to differ from the benefits of U.S.-born persons. U.S. Social Security requires about 10 years of earnings (termed 40 quarters of coverage) for eligibility for retirement benefits. A basic retirement benefit is calculated over 35 years of earnings, with earnings indexed over the entire work life. The benefit formula is "tilted" to pay a higher relative return for low levels of earnings over a lifetime than for high levels of lifetime earnings.

Consequently, persons with a qualifying but limited work life have lower average lifetime earnings, but Social Security would pay a higher relative return in retirement benefits for the years that they work. Such would be the case for an immigrant with a partial work life. A previous study by Gustman and Steinmeier (1998) estimated that among persons who receive Social Security benefits, foreign-born persons born in the Depression years (1931–1942) would receive about 7 to 15 percent more in Social Security benefits net of Social Security taxes paid than would native-born persons with a complete work life. On the other hand, Lee and Miller (2000) estimated that future

immigrants would improve the long-run actuarial balance of Social Security's Old-age, Survivors and Disability program (OASDI) by 0.06 percentage points, as they would pay more in taxes than receive in benefits. In a related study that looked at taxes and services more broadly, the National Research Council concluded that the average foreign-born person with less than a high school education imposes a net fiscal cost on the United States of \$89,000 over his or her lifetime, while the average foreign-born high school graduate provides a net gain to the United States of \$105,000 over his or her lifetime (Smith and Edmonston, 1997:Table 7.5).

This paper will describe the factors leading to different retirement incomes between foreign-born persons and the U.S.-born, and then describe the net returns of foreign-born and U.S.-born populations. Throughout the paper, the depression birth cohort (1931–1940) will be compared to the late boomer birth cohort (1956–1964) to explore shifts across cohorts in socioeconomic relationships. The paper will also compare persons who immigrated before 1970 to those who immigrated after 1969. The Immigration Reform Act of 1965, which took effect in mid-1968, changed the composition of immigrants from predominantly European and Canadian to predominantly Hispanic and Asian (Farley, 1996:163). To the extent that the U.S. labor market experience differs among immigrants by country of origin, we would expect different Social Security outcomes. Additionally, the earlier immigrants will have longer work histories in the United States, and are therefore more likely to qualify for Social Security benefits and amass other retirement assets than are later immigrants.

## *METHODOLOGY*

The analysis uses Modeling Income in the Near Term (MINT)<sup>2</sup>, a microsimulation model developed by the U.S. Social Security Administration (SSA). Using U.S. Census Bureau surveys from the early 1990s, MINT projects economic and demographic characteristics of the survey members when they reach retirement in future years. The focus here is on the experience of persons born in the Depression (born in 1931–1940) and the late baby boom (born in 1956–1964). We will refer to these as the “early” cohort and the “late” cohort, respectively. MINT takes into account birth cohort differences and diversity within cohorts, and consequently is sensitive to shifts across cohorts in socioeconomic relationships and structural changes over time such as women's lifetime

<sup>2</sup>MINT version 3 “MintFinalCSSS,” dated February 12, 2004.

earnings and work patterns. SSA (Butrica *et al.*, 2001), with substantial input from the Brookings Institution, the RAND Corporation (Panis and Lillard, 1999), and the Urban Institute (Toder *et al.*, 1999, 2002), created MINT to project the expected retirement income of persons born in 1926–1965.<sup>3</sup>

The MINT model makes independent projections of each retiree's retirement income (Social Security benefits, pensions, assets, and earnings of working beneficiaries), marital changes, and mortality using the Census Bureau's Survey of Income and Program Participation (SIPP) 1990–93 panels matched to SSA administrative records on earnings, benefits, and date of death.<sup>4</sup> The survey reports information from the early 1990s. SSA matched survey data of respondents in SIPP to its longitudinal administrative records of earnings and benefits for the respondents in order to improve retirement income projections. The administrative records of yearly earnings extend from 1951 through 1999. The administrative record of monthly benefits extends from 1980 through 1999. The MINT methodology captures the reported experiences of survey respondents directly through middle age from such choices as educational attainment, marriage and divorce, employment, pension participation, and savings, and statistically projects their characteristics into the future, adjusting for expected demographic and socioeconomic changes. MINT projects these data in detail until retirement age and continues to project key variables until death. The Depression cohort contains observed survey data from ages 50 to 64, while the late boom cohort contains observed survey data from ages 26 to 39.<sup>5</sup>

More recent immigrants were projected into MINT after the survey period (Duleep and Dowhan, 2002a) based on U.S. Immigration and Naturalization Service records of immigrants for 1993–1998. Characteristics of persons expected to immigrate in 1999–2030 were estimated using age, gender, source region of the world, and period of immigration. Emigration reflected the U.S. Census decennial estimates for 1980 and 1990 with 1998 lifetables. Because illegal immigrants mainly immigrate at younger ages, SIPP, and hence MINT, already includes most illegal immigrants in the MINT population and additional illegal immigration was omitted from MINT projections.

<sup>3</sup>These reports are available on the Urban Institute Internet site and from the authors.

<sup>4</sup>The SIPP surveys are nationally representative surveys extending over 32 to 40 months. The 1990 SIPP extended from 1990 through mid-1992, while the 1993 SIPP extended from 1993 through 1995. The MINT projections on mortality and marital history rely on data extending across the entire period of the full SIPP panel.

<sup>5</sup>Depending on the SIPP survey year and wave, some of the MINT data during these ages are observed and some are projected.

The SIPP population in MINT, as it is aged into the future, does not include foreign-born persons who arrived in the U.S. after the SIPP survey. In order to keep the MINT population representative of the 1931–1964 birth cohorts in years beyond the SIPP survey, new foreign-born persons had to be “created” and added to the MINT data set. These immigrants were added to MINT with a data replication process using data records from existing SIPP respondents. The Urban Institute created projected foreign-born persons by replicating the records of SIPP survey respondents who had similar gender, age-at-migration, and source region up to age 80 (Berk and Smith, 2003). Because immigration is much less common at older ages, the replication process is less reliable for persons who immigrated at older ages, particularly after age 59. In this study, there were 17,907 immigrants, of which 3,113, or 17 percent, were not replicated. Data in this study are based on 43,804 observations, including replicated individuals.

The focus of this paper is the change across birth cohorts in the Social Security experience of foreign- and U.S.-born persons.<sup>6</sup> We recognize that the demographic composition of foreign-born persons has changed over time. Moreover, the work histories in the United States of persons from each birth cohort will be longer for persons who immigrated before the 1970s and shorter for persons who immigrated later. Work tenure affects the cumulative Social Security payroll taxes and benefits. Therefore, the tabular data presented here distinguish both between birth cohort and period of immigration.

## RESULTS

This section briefly discusses the ethnic origin, educational attainment, family composition, and pillars of retirement income projected at age 67, when most aged are collecting retirement income (Table 1). Over four-fifths of the U.S.-born will be White non-Hispanic in origin, and about a tenth will be Black non-Hispanic. The proportion of Blacks will be slightly greater in the late cohort than the early cohort. In contrast, about two-thirds of the late birth cohort foreign-born persons and half of the early birth cohort foreign-born persons are Hispanic and Other<sup>7</sup> in origin. As expected from the literature,

<sup>6</sup>This paper ignores totalization agreements that credit work in foreign countries toward U.S. Social Security.

<sup>7</sup>The “Other” category is predominantly Asian and Pacific Islander, though its composition has changed over time.

TABLE 1  
PROJECTED PERCENTAGE DISTRIBUTIONS OF FOREIGN- AND U.S.-BORN PERSONS AT AGE 67, BY BIRTH COHORT AND PERIOD OF IMMIGRATION

	Depression Cohort						Late Boom Cohort					
	All		Pre-1970		Post-1969		All		Pre-1970		Post-1969	
	U.S.-Born	Foreign-Born	Foreign-Born	U.S.-Born	Foreign-Born	Foreign-Born	U.S.-Born	Foreign-Born	Foreign-Born	U.S.-Born	Foreign-Born	Foreign-Born
Race/Ethnicity	100	100	100	100	100	100	100	100	100	100	100	100
White non-Hispanics	87	44	56	83	31	83	28	50	26	5	5	5
Black non-Hispanics	8	5	4	10	6	6	5	5	39	33	30	30
Hispanics	4	28	26	6	30	38	29	12	30	28	28	28
Other	1	24	14	2	34	2	29	12	30	28	28	28
Marital Status	100	100	100	100	100	100	100	100	100	100	100	100
Never married	4	4	3	8	5	5	5	9	5	9	5	5
Married	71	76	74	64	77	64	71	64	71	64	71	71
Ever-married singles	25	21	23	29	18	24	24	27	24	27	24	24
Education	100	100	100	100	100	100	100	100	100	100	100	100
High school dropout	18	42	31	8	54	8	30	11	31	11	31	31
High school graduate	61	37	46	64	28	64	43	61	41	61	41	41
College graduate	20	21	23	28	19	28	28	28	28	28	28	28
Covered Quarters in Workforce	100	100	100	100	100	100	100	100	100	100	100	100
0 to 39	11	39	12	3	67	3	22	3	23	3	23	23
40 to 79	12	15	15	7	16	7	17	9	18	9	18	18
80 or more	77	46	74	91	17	91	61	88	59	88	59	59
Earnings Quintile <sup>a</sup>	100	100	100	100	100	100	100	100	100	100	100	100
First	19	42	19	18	65	18	33	18	35	18	35	35
Second	20	16	20	19	13	19	22	22	22	22	22	22
Third	20	14	18	9	9	21	16	21	16	21	16	16
Fourth	21	14	22	22	7	22	13	20	13	20	13	13
Fifth	21	14	23	21	5	21	16	20	15	20	15	15

**TABLE 1 (CONTINUED)**  
**PROJECTED PERCENTAGE DISTRIBUTIONS OF FOREIGN- AND U.S.-BORN PERSONS AT AGE 67, BY BIRTH COHORT AND PERIOD OF IMMIGRATION**

Social Security Beneficiary Status	Depression Cohort						Late Boom Cohort					
	All		Pre-1970		Post-1969		All		Pre-1970		Post-1969	
	U.S.-Born	Foreign-Born	Foreign-Born	U.S.-Born	Foreign-Born	U.S.-Born	Foreign-Born	Foreign-Born	U.S.-Born	Foreign-Born	Foreign-Born	U.S.-Born
Worker only	100	100	100	100	100	100	100	100	100	100	100	100
Auxiliary only	67	48	67	67	28	79	63	63	77	61	61	6
Dual	21	11	19	8	4	2	6	6	1	17	12	12
No SSB	5	35	6	6	63	4	19	13	5	5	20	20
Asset Quintile	100	100	100	100	100	100	100	100	100	100	100	100
First	12	30	15	15	46	15	28	25	14	29	29	25
Second	21	23	20	20	25	20	25	25	20	20	25	25
Third	22	18	22	22	14	22	17	17	23	22	17	17
Fourth	23	14	18	18	9	22	17	17	22	22	16	16
Fifth	22	16	25	25	6	22	14	14	22	22	13	13
Pension Income	100	100	100	100	100	100	100	100	100	100	100	100
Have	76	52	66	66	37	77	58	58	74	74	57	57
Have not	24	48	34	34	63	23	42	42	26	26	43	43
Income Quintile	100	100	100	100	100	100	100	100	100	100	100	100
First	15	40	19	19	61	15	33	33	16	16	34	34
Second	21	18	19	19	17	20	21	21	20	21	21	21
Third	22	14	18	18	10	21	18	18	19	19	18	18
Fourth	22	13	19	19	7	22	15	15	26	26	14	14
Fifth	21	15	24	24	6	22	13	13	20	20	13	13

Notes: \*Positive earnings divided by average earnings in covered employment, averaged over lifetime.  
 Source: The MINT Model, v3.



Hispanic origin is projected to be more prevalent among the late immigrant cohort than the early immigrant cohort. Looking across years of immigration, Hispanics are more prevalent among recent foreign-born persons than among pre-1970 foreign-born persons regardless of birth cohort.

Foreign-born persons are slightly more likely to be married at age 67 in both cohorts than are the U.S.-born (Table 1).

There is an upward trend in educational attainment from the early to the late cohort independent of nativity (Table 1). High school dropout rates decline and college graduation rates increase regardless of nativity. Nevertheless, the foreign-born retiree population has much lower educational attainment levels than the U.S.-born population. Forty-two percent of the early cohort foreign-born persons fail to complete high school, compared to 18 percent of the U.S.-born. The percentages in the late cohort will be 30 percent and 8 percent, respectively. MINT projects slightly higher college completion rates among Depression cohort foreign-born persons than among the U.S.-born, as do Farley (1996) and Levy (1998). Among the late cohort in MINT, projected college completion rates for foreign-born persons are the same as for the U.S.-born. There are also differences by period of immigration. Below the college level, post-1969 foreign-born persons have lower educational attainment than pre-1970 foreign-born persons. Among foreign-born persons, educational attainment is higher for those who immigrated before 1970 than for those who immigrated after 1969.

The pillars of retirement income include income from assets, pensions, and Social Security benefits. In all the tables, asset and income quintiles were defined for each birth cohort as a whole, and include persons with zero assets or incomes. A much smaller percentage of foreign-born persons than of U.S.-born will have pension income, particularly among the early cohort (Table 1) and among persons who immigrated after 1969 because the later immigrants have less time in the U.S. to build up retirement assets. Foreign-born persons also will be much more likely than the U.S.-born to have low levels of assets as indicated by asset distribution quintiles. In both birth cohorts, just over half of foreign-born persons will be in the lowest two asset quintiles compared to around 35 percent of U.S.-born persons. About 30 percent of foreign-born persons will have assets in the upper two quintiles, compared to around 45 percent of U.S.-born persons. Thus, foreign-born persons have lower levels of economic resources on both the pension and asset income pillars of retirement income. Consistent with their work tenure, pre-1970 foreign-born persons are more likely to have a pension and to have higher assets in retirement than are recent immigrants.



MINT projects higher proportions of foreign-born persons than of U.S.-born persons will not receive Social Security benefits (Table 1). Four to five percent of the U.S.-born will not receive any benefit but 35 percent of early cohort and 19 percent of late cohort foreign-born persons will not receive a benefit. Earlier foreign-born persons look quite similar to U.S.-born persons regarding the percentages receiving various Social Security benefits. But a much higher percentage of post-1969 foreign-born persons than U.S.-born persons will not qualify at all for retired worker benefits (*i.e.*, be uninsured), lacking the required 40 quarters of coverage for U.S. Social Security worker benefits. Thirty-nine percent of the early and 22 percent of the late cohort foreign-born persons will be uninsured for retirement benefits, in contrast to only 11 percent of the early cohort and 3 percent of the late cohort of U.S.-born. As expected, foreign-born persons (specifically those who immigrated after 1969) will be much less likely to have an extensive work life under Social Security (defined here as 80 or more quarters, *i.e.*, about half of the possible quarters by age 62). Substantial proportions of recent immigrants are projected to be without Social Security benefits (63 percent among the Depression cohort and 20 percent among the late boomers).

For those who qualify, the Social Security benefit is an increasing function of lifetime earnings. Lifetime earnings themselves are related to the number of years worked, as discussed above, and the earnings per year of work. Foreign-born persons have lower average earnings than U.S.-born persons (Table 1). Forty-two percent of Depression cohort and 33 percent of late boom foreign-born persons are in the lowest quintile of average earnings, compared to below 20 percent of U.S.-born persons. Looking more carefully, we see that pre-1970 foreign-born persons have earnings distributions nearly identical to the U.S.-born earnings distributions. More recent immigrants have much lower incomes than both pre-1970 foreign-born and U.S.-born persons. We would expect, then, that recent immigrants who qualify for Social Security benefits would have lower benefit levels than pre-1970 foreign-born and U.S.-born persons. Moreover, because of Social Security's progressive benefit structure, more recent immigrants would be expected to have higher relative returns.

Having looked at the main components of retirement income, we turn now to retirement income as a whole. Economic circumstances at retirement are indicated by total retirement-age income from all sources. These include income from all pillars of retirement income, earnings from continued work in retirement, and from Supplemental Security Income. MINT projects the retirement income of foreign-born persons as a whole to be significantly lower

TABLE 2  
PROJECTED MEDIAN INCOMES AND RATIO OF FOREIGN-BORN TO U.S.-BORN INCOMES AT AGE 67 IN 2003 DOLLARS, BY BIRTH COHORT AND PERIOD OF IMMIGRATION

	Depression Cohort				Late Boom Cohort			
	U.S.-Born Income		Foreign-Born Income as a Percent of U.S.-Born Income		U.S.-Born Income		Foreign-Born Income as a Percent of U.S.-Born Income	
	U.S.-Born Income	All Foreign-Born	Pre-1970 Foreign-Born	Post-1969 Foreign-Born	U.S.-Born Income	All Foreign-Born	Pre-1970 Foreign-Born	Post-1969 Foreign-Born
All	41,720	58*	97	26*	53,074	68*	106	65*
Race/Ethnicity								
White non-Hispanics	43,599	79*	115*	24*	56,772	72*	101	69*
Black non-Hispanics	25,433	110	111	82	33,719	112	110	112
Hispanics	29,538	51*	85*	34*	41,078	65*	112	63*
Other	42,391	56*	118	37*	58,861	76*	163*	75*
Marital Status								
Never married	22,302	10*	n.a.	n.a.	30,015	76*	n.a.	66*
Married	50,297	62*	99	31*	68,534	63*	99	60*
Ever-married singles	22,854	58*	97	36*	31,061	66*	86*	63*
Education								
High school dropout	25,126	44*	95	22*	26,069	73*	97	72*
High school graduate	41,737	84*	113*	53*	46,625	82*	107	81*
College graduate	64,529	74*	102	49*	92,245	70*	94	67*
Covered Quarters in Workforce								
0 to 39	31,972	25*	80*	22*	18,866	53*	n.a.	53*
40 to 79	36,436	82*	94	82*	32,386	96	n.a.	95
80 or more	43,888	97	98	94	55,842	85*	102	83*
Earnings Quintile <sup>a</sup>								
First	29,204	30*	81*	24*	29,091	54*	115	53*
Second	33,991	85*	85*	87*	37,678	82*	113	80*
Third	37,519	94	98	84*	47,129	88*	94	87*
Fourth	44,696	95	103	76*	60,853	90*	105	89*
Fifth	63,072	104	106	94	106,785	84*	85*	83*

TABLE 2 (CONTINUED)  
PROJECTED MEDIAN INCOMES AND RATIO OF FOREIGN-BORN TO U.S.-BORN INCOMES AT AGE 67 IN 2003 DOLLARS, BY BIRTH COHORT AND PERIOD OF IMMIGRATION

Social Security Beneficiary Status	Depression Cohort				Late Boom Cohort			
	U.S.-Born Income	Foreign-Born Income as a Percent of U.S.-Born Income			U.S.-Born Income	Foreign-Born Income as a Percent of U.S.-Born Income		
		All Foreign-Born	Pre-1970 Foreign-Born	Post-1969 Foreign-Born		All Foreign-Born	Pre-1970 Foreign-Born	Post-1969 Foreign-Born
Worker only	45,317	92*	99	81*	55,591	78*	102	76*
Auxiliary only	34,606	79*	117	56*	32,290	69*	n.a.	74*
Dual	35,076	84*	98	n.a.	42,112	91*	110	90*
No SSB	32,060	21*	36*	20*	68,816	13*	n.a.	13*
Asset Quintile								
First	15,992	51*	81*	42*	21,976	60*	97	59*
Second	27,434	69*	90*	45*	31,797	84*	99	83*
Third	37,197	77*	92*	57*	44,614	89*	98	87*
Fourth	47,992	93*	96	88*	63,976	90*	113*	87*
Fifth	78,899	107*	113*	96	129,000	91*	89*	91*
Pension Income								
Have	48,491	89*	107*	57*	61,853	81*	102	79*
Have not	20,553	53*	103	31*	28,589	71*	105	70*
Income Quintile								
First	12,307	62*	92*	42*	15,550	73*	105	71*
Second	24,467	97*	98*	95*	30,753	98*	102	98*
Third	38,664	99	98*	101	49,416	99	101	99*
Fourth	56,944	99	99	92*	77,513	99	104*	98*
Fifth	93,956	110*	111*	106	151,820	98	98	98

Notes: \*Positive earnings divided by average earnings in covered employment, averaged over lifetime.  
 \*indicates that the foreign-born median income is significantly different from the U.S.-born median income at the 95% confidence level, where the approximate 95% confidence interval around the median equals the median +/- (1.57 \* interquartile range)/sqrt(N).  
 The median and interquartile range include cloned immigrants, but N excludes cloned immigrants.  
 n.a. indicates fewer than 30 observations.  
 Source: The MINT Model, v3.



than that of the U.S.-born regardless of most characteristics (Table 2).<sup>8</sup> This pattern occurs within almost all groups defined by birth cohort, race/ethnicity (except for Black non-Hispanics), marital status, education, Social Security benefit status, asset quintile, pension income, and the lower retirement income quintiles. The differences in retirement-age income are much more pronounced between recent foreign- and U.S.-born persons than they are between pre-1970 foreign- and U.S.-born persons.

Incomes of foreign-born persons overall appear to be more similar to the U.S.-born incomes for the late cohort than for the early cohort but the results are mixed when disaggregated. In the late cohort, the median total retirement income of foreign-born persons will be about 68 percent of the median for the U.S.-born, while it was only 58 percent in the early cohort (Table 2). The income differences between foreign- and U.S.-born persons across cohorts will be smallest among White and Black non-Hispanics, married couples, high school and college graduates, and persons in the higher asset and income quintiles.

Comparing the late to the early birth cohorts, lower-income foreign-born persons generally made gains in retirement income relative to the U.S.-born. Income gains of foreign-born persons (relative to the U.S.-born) across cohorts are most notable among:

- Hispanics, whose incomes rose from 51 percent to 65 percent of U.S.-born incomes,
- the never-married, whose incomes rose from 10 to 76 percent of U.S.-born incomes (the 10 percent figure is based on a small sample, and is therefore less reliable than other figures in Table 2),
- high school dropouts, whose incomes rose from 44 to 73 percent of U.S.-born incomes,
- persons with 0 to 40 covered quarters, whose incomes rose from 25 to 53 percent of U.S.-born incomes, and
- persons with no pension, whose incomes rose from 53 to 71 percent of U.S.-born incomes.

<sup>8</sup>The median statistic is used to estimate the typical level because the distribution of retirement income is skewed within some groups. Because the MINT data are quite complex, the indicator of significance reflects the approximate nonparametric 95% confidence interval around the median suggested by McGill *et al.* (1978). The confidence interval is: median  $\pm$  (1.57 \* interquartile range)/sqrt(N). In this computation, N is the number of real observations, that is, N is the unweighted number of noncloned observations, and the median is weighted. If the immigrant and nonimmigrant confidence intervals do not overlap, then the two medians are statistically different.

But there also were losses to foreign-born persons relative to the U.S.-born, most notably among:

- White non-Hispanics (79 percent down to 72 percent),
- Social Security beneficiaries with worker or auxiliary benefits, and
- persons in the highest asset and income quintiles.

Though not shown, these trends hold by gender as well.

The trends are brought into starker relief when separating by period of immigration. Post-1969 foreign-born persons from the Depression cohort have the lowest incomes, in part because they entered the country at older ages.

### *ADEQUACY IN SOCIAL SECURITY*

A common measure of economic vulnerability is income below the official U.S. poverty level. MINT projects that the poverty rate will be higher among foreign-born persons than among the U.S.-born (Table 3). However, the difference will be reduced in the late cohort. The poverty rate will be about 13 percentage points higher among foreign-born persons in the early cohort but only about 8 percentage points higher in the late cohort.<sup>9</sup> This relationship holds within most subgroups in Table 3, though notable exceptions are the Depression cohort never-married and late boom cohort Black non-Hispanics, for whom immigrant poverty rates are projected to be lower than among the U.S.-born. When looking at the Depression cohort by period of immigration, we see that the poverty rate among recent foreign-born persons is very high (28 percent) compared to pre-1970 foreign-born persons (6 percent) and to the U.S.-born (4 percent). The differences are not nearly as extreme in the late boom cohort.

### *RELATIVE RETURN IN SOCIAL SECURITY*

Workers who just barely qualify for benefits will likely receive more dollars in benefits than they paid in taxes because of the progressive benefit formula. Foreign-born persons on average spend fewer years in the United States, have fewer periods of employment (quarters of coverage) that count toward a Social Security benefit, and have lower earnings. Thus, a larger proportion of

<sup>9</sup>While Table 3 shows a drop in the absolute difference between poverty rates of immigrants and U.S.-born, the relative difference appears to remain about the same.

TABLE 3  
PROJECTED POVERTY RATES OF FOREIGN- AND U.S.-BORN PERSONS AT AGE 67, BY BIRTH COHORT AND PERIOD OF IMMIGRATION

	Depression Cohort				Late Boom Cohort							
	All		Pre-1970		Post-1969		All		Pre-1970		Post-1969	
	U.S.-Born	Foreign-Born	Foreign-Born	Foreign-Born	Foreign-Born	Foreign-Born	U.S.-Born	Foreign-Born	Foreign-Born	Foreign-Born	Foreign-Born	Foreign-Born
All	3.8	16.7	5.7	27.9	2.4	10.2	2.1	10.9				
Race/Ethnicity												
White non-Hispanics	3.1	13.7	2.4	34.7	1.8	10.4	2.0	11.7				
Black non-Hispanics	9.0	17.7	13.0	21.4	6.1	5.5	0.0	5.9				
Hispanics	8.0	21.4	9.3	32.1	4.0	12.8	3.3	13.5				
Other	7.1	16.6	10.2	19.2	4.4	7.4	0.0	7.6				
Marital Status												
Never married	15.1	14.2	n.a.	n.a.	8.1	12.5	n.a.	13.6				
Married	1.7	16.4	4.2	28.3	1.0	8.6	0.6	9.1				
Ever-married singles	8.2	18.4	9.1	30.5	4.2	14.6	4.7	15.5				
Education												
High school dropout	9.5	24.9	9.5	33.9	11.0	17.1	5.9	17.4				
High school graduate	2.9	11.4	4.2	23.7	2.2	8.4	2.4	9.1				
College Graduate	1.4	9.8	3.5	17.3	0.6	5.6	0.0	6.1				
Covered Quarters in Workforce												
0 to 39	12.5	34.7	22.7	36.7	31.0	34.7	n.a.	34.8				
40 to 79	7.5	12.2	7.5	16.5	10.6	11.2	n.a.	11.4				
80 or more	2.0	2.8	2.7	3.5	0.9	1.2	1.2	1.2				
Earnings Quintile <sup>a</sup>												
First	11.3	33.1	17.0	37.8	11.6	24.9	6.3	25.7				
Second	6.3	10.5	8.8	13.1	1.7	7.6	4.6	7.8				
Third	1.9	5.3	2.6	10.6	0.2	1.1	0.0	1.2				
Fourth	0.1	2.9	1.8	6.3	0.1	0.3	0.0	0.4				
Fifth	0.0	0.7	0.0	3.8	0.0	0.2	0.0	0.2				

TABLE 3 (CONTINUED)  
PROJECTED POVERTY RATES OF FOREIGN- AND U.S.-BORN PERSONS AT AGE 67, BY BIRTH COHORT AND PERIOD OF IMMIGRATION

	Depression Cohort						Late Boom Cohort					
	All		Pre-1970		Post-1969		All		Pre-1970		Post-1969	
	U.S.-Born	Foreign-Born	Foreign-Born	Foreign-Born	Foreign-Born	Foreign-Born	U.S.-Born	Foreign-Born	Foreign-Born	Foreign-Born	Foreign-Born	Foreign-Born
Social Security Beneficiary Status												
Worker only	2.5	5.1	3.3	3.3	9.3	1.6	3.7	1.8	1.8	3.9	3.9	
Auxiliary only	5.3	8.7	6.5	6.5	11.8	12.8	12.9	n.a.	n.a.	13.1	13.1	
Dual	3.0	4.2	2.8	2.8	n.a.	1.0	1.2	0.0	0.0	1.3	1.3	
No SSB	22.8	38.5	39.8	39.8	38.4	22.0	36.8	n.a.	n.a.	37.2	37.2	
Asset Quintile												
First	20.3	36.1	23.0	23.0	40.3	12.8	28.3	12.8	12.8	28.9	28.9	
Second	4.1	17.4	8.3	8.3	24.7	2.4	6.8	1.8	1.8	7.1	7.1	
Third	2.0	9.6	2.6	2.6	20.9	0.3	3.2	0.0	0.0	3.6	3.6	
Fourth	0.2	1.8	0.6	0.6	4.0	0.0	0.0	0.0	0.0	0.0	0.0	
Fifth	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Pension Income												
Have	1.0	3.3	1.4	1.4	6.8	0.8	2.8	0.5	0.5	3.1	3.1	
Have not	12.9	31.2	14.1	14.1	40.6	7.8	20.6	6.8	6.8	21.2	21.2	
Income Quintile												
First	26.0	39.4	29.5	29.5	42.6	15.6	30.0	13.3	13.3	30.7	30.7	
Second	0.3	6.1	0.6	0.6	12.2	0.1	1.5	0.0	0.0	1.6	1.6	
Third	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Fourth	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Fifth	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	

Notes: \*Positive earnings divided by average earnings in covered employment, averaged over lifetime.

n.a. indicates fewer than 30 observations.

Source: The MINT Model, v3.



TABLE 4  
PROJECTED MEDIAN LIFETIME SHARED NET BENEFITS AS A PERCENT OF LIFETIME SHARED EARNINGS, BY BIRTH COHORT AND PERIOD OF IMMIGRATION

	Depression Cohort						Late Boom Cohort												
	U.S.-Born		Foreign-Born		All		Pre-1970		Post-1969		U.S.-Born		All		Pre-1970		Post-1969		
All	3.0	2.2*	3.6*	2.2*	3.6*	2.2*	-2.3*	-0.4	1.2*	-0.6	1.4*	1.2*	-0.6	1.4*	1.2*	-0.6	1.4*	1.4*	
Race/Ethnicity																			
White non-Hispanics	2.9	2.8	3.7*	2.8	3.7*	2.8	-2.6*	-0.6	0.7*	-0.6	1.0*	0.7*	-0.6	1.0*	0.7*	-0.6	1.0*	1.0*	
Black non-Hispanics	3.8	-0.1*	1.8*	-0.1*	1.8*	-0.1*	-1.3*	0.8	1.4	3.1	1.1	1.4	3.1	1.1	1.4	3.1	1.1	1.1	
Hispanics	3.3	1.7*	4.0	1.7*	4.0	1.7*	-6.7*	0.6	1.4*	-0.4*	1.7*	1.4*	-0.4*	1.7*	1.4*	-0.4*	1.7*	1.7*	
Other	3.0	1.8	2.1	1.8	2.1	1.8	1.0	-0.7	1.4*	-1.8	1.5*	1.4*	-1.8	1.5*	1.4*	-1.8	1.5*	1.5*	
Marital Status																			
Never married	2.4	2.4	n.a.	2.4	n.a.	2.4	n.a.	-1.0	0.0	n.a.	0.6*	0.0	n.a.	0.6*	0.0	n.a.	0.6*	0.6*	
Married	2.4	2.0	3.0*	2.0	3.0*	2.0	-2.2*	-1.0	0.6*	-0.7	0.8*	0.6*	-0.7	0.8*	0.6*	-0.7	0.8*	0.8*	
Ever-married singles	5.4	3.3*	5.2	3.3*	5.2	3.3*	-6.5*	1.0	2.8*	-0.3*	3.2*	2.8*	-0.3*	3.2*	2.8*	-0.3*	3.2*	3.2*	
Education																			
High school dropout	3.4	0.6*	4.3*	0.6*	4.3*	0.6*	-11.3*	1.1	1.3	0.7	1.3	1.3	0.7	1.3	1.3	0.7	1.3	1.3	
High school graduate	3.2	3.5	3.7*	3.5	3.7*	3.5	2.8	-0.1	1.4*	-0.6	1.8*	1.4*	-0.6	1.8*	1.4*	-0.6	1.8*	1.8*	
College graduate	2.2	1.6	2.3	1.6	2.3	1.6	-1.3*	-1.3	0.6*	-0.9	0.8*	0.6*	-0.9	0.8*	0.6*	-0.9	0.8*	0.8*	
Covered Quarters in Workforce																			
0 to 39	8.1	-11.2*	7.8	-11.2*	7.8	-11.2*	-11.7*	4.0	-4.3*	n.a.	-4.4*	-4.3*	n.a.	-4.4*	-4.3*	n.a.	-4.4*	-4.4*	
40 to 79	7.7	6.6*	6.6*	6.6*	6.6*	6.6*	6.8	7.4	7.2	n.a.	7.2	7.2	n.a.	7.2	7.2	n.a.	7.2	7.2	
80 or more	2.0	2.5*	2.2	2.5*	2.2	2.5*	3.7*	-0.8	0.2*	-0.8	0.4*	0.2*	-0.8	0.4*	0.2*	-0.8	0.4*	0.4*	
Earnings Quintile <sup>a</sup>																			
First	7.8	-7.0*	6.9	-7.0*	6.9	-7.0*	-11.7*	5.3	4.3	1.5*	4.3	4.3	1.5*	4.3	4.3	1.5*	4.3	4.3	
Second	5.7	5.5	5.5	5.5	5.5	5.5	4.7	1.7	4.6*	0.6	4.9*	4.6*	0.6	4.9*	4.6*	0.6	4.9*	4.9*	
Third	3.3	4.2*	4.2*	4.2*	4.2*	4.2*	4.6*	0.1	1.1*	-0.4	1.3*	1.1*	-0.4	1.3*	1.1*	-0.4	1.3*	1.3*	
Fourth	1.3	2.9*	2.3*	2.9*	2.3*	2.9*	3.8*	-1.3	0.1*	-1.3	0.2*	0.1*	-1.3	0.2*	0.1*	-1.3	0.2*	0.2*	
Fifth	-0.2	0.4*	0.0	0.4*	0.0	0.4*	1.2*	-3.3	-2.3*	-3.2	-2.3*	-2.3*	-3.2	-2.3*	-2.3*	-3.2	-2.3*	-2.2*	



TABLE 4 (CONTINUED)  
PROJECTED MEDIAN LIFETIME SHARED NET BENEFITS AS A PERCENT OF LIFETIME SHARED EARNINGS, BY BIRTH COHORT AND PERIOD OF IMMIGRATION

	Depression Cohort				Late Boom Cohort			
	Pre-1970		Post-1969		Pre-1970		Post-1969	
	U.S.-Born	Foreign-Born	Foreign-Born	Foreign-Born	All	U.S.-Born	Foreign-Born	Foreign-Born
Social Security Beneficiary Status								
Worker only	1.7	2.9*	2.1*	4.6*	0.8*	-1.0	0.8*	1.1*
Auxiliary only	9.1	9.3	8.0	12.1	16.1*	8.2	16.1*	16.5*
Dual	6.1	5.4*	5.5	n.a.	5.1*	3.5	5.1*	5.6*
No SSB	3.3	-11.7*	-0.3*	-11.7*	-11.8*	-3.6	-11.8*	-11.8*
Asset Quintile								
First	5.4	-3.0*	5.7	-11.4*	1.9	2.1	1.9	2.0
Second	3.8	2.6*	2.8*	2.4	2.4*	0.8	2.4*	2.9*
Third	3.1	2.5	4.2*	-1.5*	1.3*	-0.1	1.3*	1.3*
Fourth	2.4	3.7*	3.7*	3.3	0.5*	-1.1	0.5*	0.6*
Fifth	2.0	2.7*	2.7*	2.9	-0.3*	-1.9	-0.3*	-0.1*
Pension Income								
Have	2.6	3.2*	3.5*	2.7	0.9*	-0.7	0.9*	1.2*
Have not	4.4	0.5*	3.6*	-10.4*	1.6*	0.7	1.6*	1.7*
Income Quintile								
First	6.4	-2.6*	5.9	-11.6*	1.9*	3.3	1.9*	2.0*
Second	4.5	3.7	4.4	-1.5*	3.2*	1.1	3.2*	3.4*
Third	2.8	3.7*	3.3	4.1*	1.4*	-0.3	1.4*	1.8*
Fourth	2.3	2.3	2.1	2.8	-0.2*	-1.3	-0.2*	0.2*
Fifth	1.3	2.3*	2.5*	1.4	-1.2*	-2.2	-1.2*	-1.2*

Notes: \*Positive earnings divided by average earnings in covered employment, averaged over lifetime.  
\* indicates that the foreign-born median shared net benefit as a percent of shared earnings is significantly different from the U.S.-born shared median net benefit as a percent of shared earnings at the 95% confidence level, where the approximate 95% confidence interval around the median equals the median +/- (1.57 \* inter quartile range)/sqrt(N).  
The median and interquartile range include cloned immigrants, but N excludes cloned immigrants.  
n.a. indicates fewer than 30 observations.  
Source: The MINT Model, v3.



TABLE 5  
PROJECTED MEDIAN SHARED INTERNAL RATES OF RETURN, BY BIRTH COHORT AND PERIOD OF IMMIGRATION

	Depression Cohort						Late Boom Cohort					
	All		Pre-1970		Post-1969		All		Pre-1970		Post-1969	
	U.S.-Born	Foreign-Born	Foreign-Born	Foreign-Born	Foreign-Born	Foreign-Born	U.S.-Born	Foreign-Born	Foreign-Born	Foreign-Born	Foreign-Born	Foreign-Born
All	4.1	3.9*	4.2*	4.2*	1.4	2.9	3.3*	2.8	3.4*	3.1	3.4*	
Race/Ethnicity												
White non-Hispanics	4.0	4.1	4.2*	4.2*	1.4	2.8	3.2*	2.8	3.3*	3.3*	3.3*	
Black non-Hispanics	4.4	3.0	3.6*	3.6*	2.3	3.2	3.4	3.6	3.3	3.3	3.3	
Hispanics	4.2	3.7	4.5*	4.5*	-6.4*	3.2	3.4*	2.9*	3.5*	3.5*	3.5*	
Other	4.0	3.7	3.8	3.8	3.5	2.7	3.4*	2.5	3.4*	3.4*	3.4*	
Marital Status												
Never married	3.8	3.9	n.a.	n.a.	n.a.	2.7	3.0	n.a.	3.1	3.1	3.1	
Married	3.9	3.8	4.1*	4.1*	2.0	2.7	3.2*	2.8	3.2*	3.2*	3.2*	
Ever-married singles	4.6	4.2*	4.7	4.7	-5.0	3.3	3.7*	2.9*	3.9*	3.9*	3.9*	
Education												
High school dropout	4.3	3.2	4.5	4.5	-100.0*	3.3	3.4	3.2	3.4	3.4	3.4	
High school graduate	4.1	4.2	4.2	4.2	4.2	3.0	3.4*	2.8*	3.5*	3.5*	3.5*	
College graduate	3.8	3.7	3.9	3.9	2.3	2.6	3.2*	2.7	3.2*	3.2*	3.2*	
Covered Quarters in Workforce												
0 to 39	5.3	-100.0*	5.1	5.1	-100.0*	4.1	0.5	n.a.	-0.4	-0.4	-0.4	
40 to 79	5.3	5.3	5.1	5.1	5.7	4.6	4.9*	n.a.	5.0*	5.0*	5.0*	
80 or more	3.8	4.0*	3.8	3.8	4.4*	2.8	3.1*	2.8	3.1*	3.1*	3.1*	
Earnings Quintile <sup>a</sup>												
First	5.3	-100.0*	5.2	5.2	-100.0*	4.2	4.1	3.5*	4.1	4.1	4.1	
Second	4.8	4.8	4.8	4.8	4.8	3.4	4.2*	3.2	4.3*	4.3*	4.3*	
Third	4.1	4.5*	4.3*	4.3*	4.7*	3.0	3.5*	2.8	3.4*	3.4*	3.4*	
Fourth	3.5	4.1*	3.9*	3.9*	4.5*	2.6	3.0*	2.6	3.1*	3.1*	3.1*	
Fifth	2.9	3.2*	3.0	3.0	3.6*	1.9	2.2*	1.9	2.3*	2.3*	2.3*	
Social Security Beneficiary Status												
Worker only	3.7	4.1*	3.8	3.8	4.7*	2.7	3.2*	2.8	3.3*	3.3*	3.3*	
Auxiliary only	5.4	5.6	5.4	5.4	6.9*	4.6	6.9*	n.a.	6.9*	6.9*	6.9*	
Dual	4.8	4.7	4.8	4.8	n.a.	3.8	4.2*	3.2*	4.4*	4.4*	4.4*	
No SSB	4.2	-100.0*	2.9	2.9	-100.0*	1.7	-100.0*	n.a.	-100.0*	-100.0*	-100.0*	

TABLE 5 (CONTINUED)  
PROJECTED MEDIAN SHARED INTERNAL RATES OF RETURN, BY BIRTH COHORT AND PERIOD OF IMMIGRATION

	Depression Cohort				Late Boom Cohort			
	All		Pre-1970		Post-1969		All	
	U.S.-Born	Foreign-Born	Foreign-Born	Foreign-Born	Foreign-Born	Foreign-Born	U.S.-Born	Foreign-Born
Asset Quintile								
First	4.7	-0.1	4.7	4.1	-100.0*	3.5	2.9*	3.6
Second	4.3	4.1	4.1	4.4*	4.0	3.8*	2.9*	3.9*
Third	4.1	4.1	4.4*	4.2*	2.4	3.4*	3.3	3.4*
Fourth	3.9	4.2*	4.2*	4.2*	4.2	3.2*	3.0*	3.2*
Fifth	3.7	4.0*	4.0*	4.0*	4.5*	2.9*	2.5	3.0*
Pension Income								
Have	3.9	4.2*	4.2*	4.2*	4.1	3.3*	2.8	3.3*
Have not	4.5	3.2	4.3*	4.3*	-100.0*	3.5*	2.8*	3.5*
Income Quintile								
First	5.0	1.4	4.8	4.5	-100.0*	3.6	3.2*	3.7
Second	4.5	4.3	4.5	4.2	2.4	3.9*	3.2	4.0*
Third	4.0	4.4*	4.2	4.7*	4.7*	3.4*	2.8	3.5*
Fourth	3.9	3.9	3.8	3.8	4.0	2.9*	2.6	3.0*
Fifth	3.5	3.9*	3.9*	3.9*	3.5	2.6*	2.7*	2.6*

Notes: \*Positive earnings divided by average earnings in covered employment, averaged over lifetime.  
 \* indicates that the foreign-born median shared internal rate of return is significantly different from the U.S.-born median shared internal rate of return at the 95% confidence level, where the approximate 95% confidence interval around the median equals the median  $\pm$  (1.57 \* interquartile range)/sqrt(N). The median and interquartile range include cloned immigrants, but N excludes cloned immigrants.  
 n.a. indicates fewer than 30 observations.  
 Source: The MINT Model, v3.

foreign-born workers than of native-born workers may benefit from the progressive Social Security benefit formula. On the other hand, workers who lack the covered employment to qualify for benefits still contribute payroll taxes to the Social Security Trust Fund while they work. Because of foreign-born workers' shorter work tenures, they might also be represented in this group of nonbeneficiaries in larger proportions than are native-born persons. This section examines the relative returns in the Social Security system for different groups of foreign- and U.S.-born persons using two different measures.

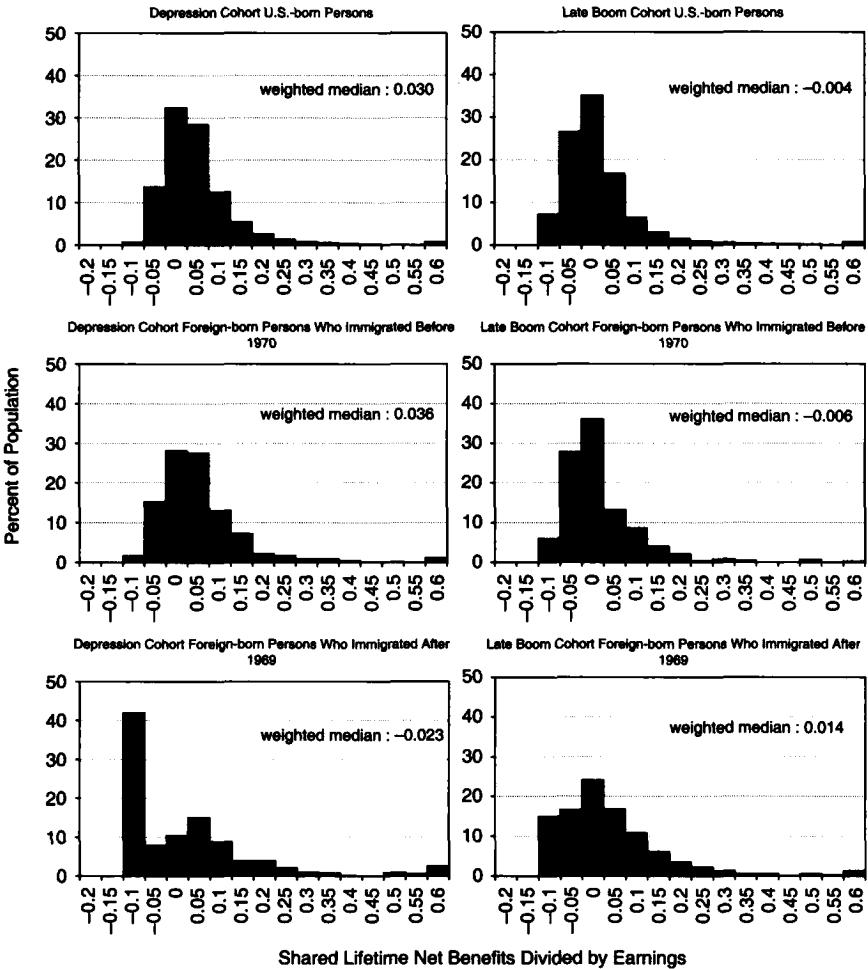
One measure of the relative returns in Social Security is lifetime shared net benefits (*i.e.*, benefits less taxes) divided by the lifetime shared covered earnings, as used in Smith *et al.* (2003/2004). Net lifetime benefits are the present values of lifetime benefits less lifetime taxes, and are often negative. The present values of taxes, benefits, and earnings were evaluated at age 67 using a 3 percent discount rate. This measure represents the net Social Security transfer to the individual as a percent of his or her lifetime earnings and is presented in Table 4. If the measure is positive, then the individual receives more from Social Security than paid in taxes, and if negative the individual has a lifetime loss. A shared earnings measure is used here that takes into account couple earnings and benefits.<sup>10</sup>

A second measure of relative return is the internal rate of return (IRR), presented in Table 5. The IRR measures the investment value of Social Security to each individual, and under limited assumptions, can be used to compare Social Security payroll taxes and benefits to an investment with a known yield. A high Social Security IRR could be interpreted as high "investment return" on payroll taxes. The IRR is the interest rate that equates or converts lifetime taxes into lifetime benefits. It is computed for each individual as the real interest rate that discounts to zero the stream of that person's annual Social Security benefits less payroll taxes. Without accounting for risk, persons for whom the Social Security IRR is higher than the prevailing interest rate get a "better deal" from Social Security than they would in the alternative investment.<sup>11</sup>

<sup>10</sup>Shared earnings are defined as own earnings when single, and one-half the combined own and spouse earnings when married. Shared benefits are defined similarly.

<sup>11</sup>Internal rates of return range from negative 100 percent to positive infinity. An IRR of negative 100 percent means that payroll taxes are positive yet benefits are zero – that is, the person loses all the investment. An IRR of zero means that the present value of taxes and benefits is equal, so the investment is neutral. Positive IRRs indicate that the present value of benefits is greater than the present value of taxes. Internal rates of return are particularly instructive in seeing which segments of the population might benefit from Social Security individual accounts.

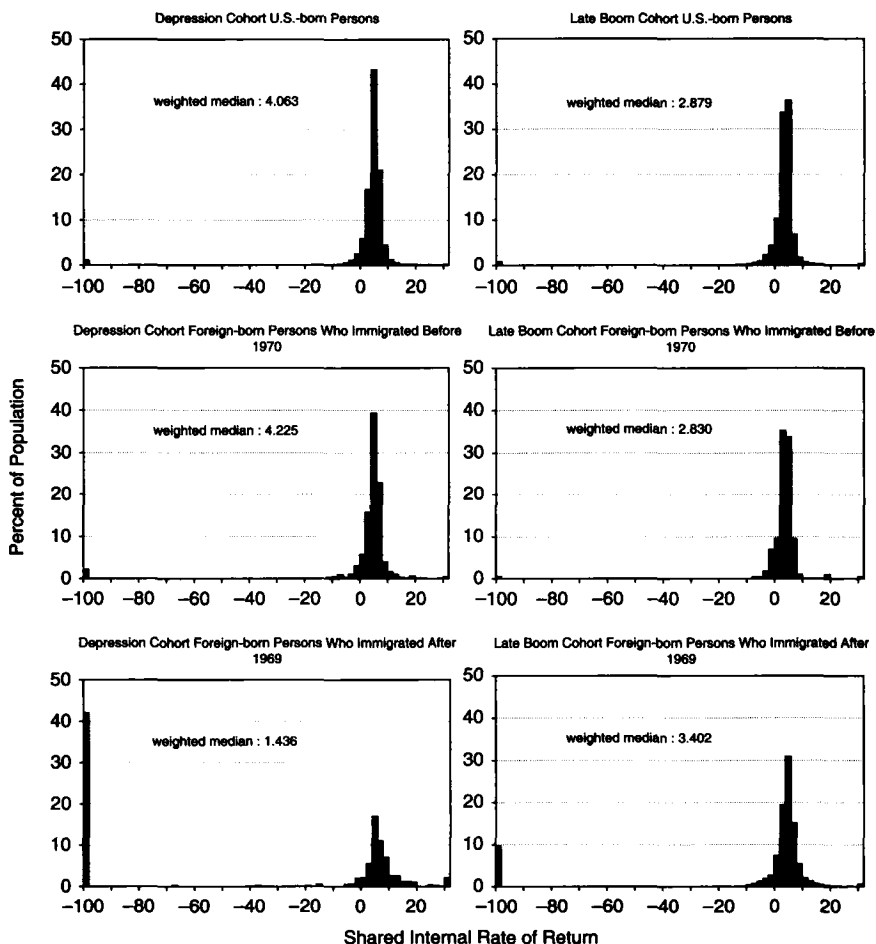
**Figure I. Distribution of Shared Lifetime Net Benefits Divided by Lifetime Earnings, by Birth Cohort and Period of Immigration**



Note: Values of shared lifetime net benefits divided by earnings greater than 1.0 were set to 1.0.

In Tables 4 and 5 we present only the medians and confidence bands of the distributions rather than the means, because the underlying distributions are skewed. Figure I presents the distributions of net benefits divided by earnings by birth cohort and nativity. For the U.S.-born and for pre-1970 foreign-born persons, these distributions appear normal in the center of the distribution, but have very long tails on the right. People represented in these right tails have high gains relative to earnings from Social Security, whereas there are not as many

**Figure II. Distribution of Shared Internal Rates of Return, by Birth Cohort and Period of Immigration**



Note: Values of shared internal rate of return greater than 30 were set to 30.

people in the left tails with comparable losses as a percent of their earnings. People in these right tails tend to have low lifetime earnings – the measure is large because the denominator (earnings) is small. For post-1969 foreign-born persons, the distributions appear more bimodal, and also have long tails on the right.

In Figure II we present distributions of internal rates of return. They too are not normally distributed, having long tails on the left and a spike at negative 100 percent (especially notable for post-1969 foreign-born persons). The IRR

is not sensitive to lifetime earnings, so people represented in these left tails simply have paid much more in taxes than received in benefits. These individuals could be either low-earning persons who worked insufficiently to qualify for benefits or high-earning persons who died young.

In both Figures I and II, the returns in Social Security are not normally distributed. With distributions as skewed as these, presenting group medians with confidence bands around them is more meaningful than the typical presentation of group averages in redistributive analyses (*see, e.g.*, Leimer, 1999). Thus in Tables 4 and 5 we have decided to present only the medians and confidence bands of the distributions.

There is an overall trend by birth cohort of declining value in Social Security evident both in Tables 4 and 5 that is independent of nativity. For the U.S.-born, the net benefits over earnings drops from 3.0 percent in the Depression cohort to -0.4 percent in the late boom cohort. For foreign-born persons, the same measure drops from 2.2 percent to 1.2 percent. There is also a progressive trend of declining net benefits over earnings as income increases. For example, U.S.-born persons from the Depression cohort have net benefits over earnings of 6.4 percent in the first income quintile, and this measure drops smoothly to 1.3 percent in the fifth income quintile. This progressive trend is also evident for foreign-born persons but not always in the first or second quintiles. These low-income persons typically experience a loss in Social Security because they pay payroll taxes but do not qualify for benefits.

Within those trends, there are different cross-subsidies. The Depression cohort data in Table 4 project that the median foreign-born person has significantly lower net benefits divided by earnings (2.2 percent) than does the median U.S.-born person (3.0 percent). But when disaggregated by period of immigration, it appears that foreign-born persons who immigrated before 1970 have a higher net benefit as a percent of earnings (3.6 percent), and those who immigrated after 1969 have a lower net benefit as a percent of earnings (-2.3 percent). Thus in the Depression cohort, recent immigrants are subsidizing the pre-1970 foreign- and U.S.-born persons. Table 5 shows the same pattern with IRRs.

The patterns are reversed for late boom cohorts, where foreign-born persons overall have a higher net benefit as a percent of earnings than do U.S.-born persons. But when disaggregated, both earlier immigrants and the U.S.-born have the same net benefits as a percent of earnings, while recent immigrants have a higher return than the U.S.-born. Thus in the late boom cohort, post-1969 foreign-born persons are being subsidized by pre-1970 foreign- and U.S.-born persons. The same pattern holds with IRRs in Table 5 for the late boom cohort.

It is particularly interesting to observe the IRRs by lifetime earnings quintile in Table 5. In the Depression cohort, U.S.-born persons in the lowest quintile have the highest median IRR (5.3 percent) while foreign-born persons have the lowest median IRR (-100 percent). Thus more than half the foreign-born persons in the lowest earnings quintile "lose" all their payroll taxes. But for the later cohort, U.S.-born and foreign-born persons in the lowest quintile of lifetime earnings are not distinguishable on the basis of median IRR. Both nativity groups have the highest median IRRs of all the earnings quintiles.

In general, we could say of the Depression cohort that foreign-born persons who immigrated before 1970 are getting a higher return from Social Security than are U.S.-born persons, while foreign-born persons who immigrated after 1969 generally paid taxes into Social Security but did not attain enough quarters of coverage to qualify for benefits and therefore get a lower return than do U.S.-born persons. Among the late boom cohort, post-1969 foreign-born persons will have higher rates of attaining Social Security benefits, but their earnings will still be relatively low. Thus these foreign-born persons will benefit more from Social Security's progressive benefit formula than will the U.S.-born. Post-1969 foreign-born persons will also obtain higher returns from Social Security than U.S.-born persons and pre-1970 foreign-born persons who have higher earnings.

### *CONCLUSION*

Foreign-born persons typically have shorter work histories and lower earnings in the United States than do U.S.-born persons. Because Social Security requires of the worker at least ten years of earnings to qualify for worker benefits, a lower percentage of foreign-born than of U.S.-born persons would be expected to qualify for old-age benefits. But those who do qualify for benefits are expected to get higher lifetime returns relative to their payroll taxes because of the progressive nature of Social Security benefits. This paper examines how foreign-born persons differ from the U.S.-born regarding Social Security as a source of retirement income, and regarding the relationship between lifetime net benefits and lifetime earnings. We use the MINT model, a statistically adjusted Census data set matched with Social Security administrative data and with lifecourse projections, to represent the lifetime experience of the Depression and the late baby boom birth cohorts.

Income and poverty measures are used to describe the adequacy of Social Security income. Foreign-born persons generally have lower levels of retirement-age income and higher poverty rates than do the U.S.-born. We project that



the foreign-born will be less likely to have pension income and income from assets, and will be less likely to receive Social Security benefits in comparison to the U.S.-born.

The relationship of payroll taxes to benefits in the Social Security system is measured in two ways: by the lifetime net benefits relative to lifetime Social Security earnings and by the internal rate of return of payroll taxes and benefits. Foreign-born persons born in the early cohort are projected to have lower relative returns in Social Security than U.S.-born persons, while foreign-born persons born in the later cohort are projected to have higher relative returns than U.S.-born persons.<sup>12</sup>

The Immigration Reform Act of 1965 changed immigration criteria and country quotas; and to the extent that the U.S. labor market experience differs among immigrants by country of origin, we would expect different Social Security outcomes. We capture this difference by distinguishing between persons who immigrated before 1970 and those who immigrated after 1969. MINT projects that pre-1970 foreign-born persons will have retirement incomes and rates of return similar to U.S.-born persons, regardless of birth cohort. Post-1969 foreign-born persons will have lower retirement incomes than will U.S.-born persons, also regardless of birth cohort. But we do see a cohort effect with recent foreign-born persons. Post-1969 foreign-born persons born 1931–1940 have lower projected rates of return in Social Security than do U.S.-born persons, and those born 1956–1964 have higher projected rates of return in Social Security than do U.S.-born persons.

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<sup>12</sup>Gustman and Steinmeier (1998) found that among Depression cohort immigrants and non-immigrants who actually received Social Security benefits, immigrants had higher rates of return.

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