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Social Security Benefits of Immigrants and U.S. Born

Alan L. Gustman and Thomas L. Steinmeier

8.1 Introduction

Social Security is often billed as a retirement insurance plan where benefits are earned based on payroll tax contributions. But there also is a transfer component to Social Security. The benefit formula is designed to transfer benefits disproportionately to families with a history of low lifetime earnings. This paper finds that the income support feature of Social Security disproportionately transfers benefits to immigrants relative to U.S. born *with identical earnings* in all years the immigrants have been in the United States. Moreover, immigrants who have been in the United States for a decade or two and who have relatively high earnings benefit disproportionately. A method for prorating the benefits of immigrants based on time in the United States is discussed. Prorating would provide similar rates of return under Social Security to U.S.- and foreign-born individuals with similar earnings in each year of work. Paradoxically, although the foreign born have a higher return to their Social Security taxes than the U.S. born, even in the absence of reform, it is in the interest of the U.S. born for immigrants to have been included in Social Security.

Even though immigrants receive a better deal under Social Security than U.S. born, the immigrants just reaching retirement age will have contributed more to Social Security than they will receive in benefits.

Why do immigrants receive a better return on Social Security taxes paid than U.S. born? For those reaching retirement age today, when lifetime earnings history is calculated for purposes of determining Social Security benefits, a simple average is taken of the highest 35 years of real covered earnings. When average covered earnings is computed for immigrants who have spent fewer than 35 years in the United States, the average includes zeros for years spent outside the United States. Accordingly, immigrants who have been in the United States for only a part of their working lives are treated by the Social Security system as having lower average earnings than the average of the yearly earnings they in fact report. Because the Social Security benefit formula redistributes benefits toward those with a low lifetime earnings history, and years spent outside the country are counted as years of zero earnings, Social Security taxes paid by immigrants generate a higher return than do the taxes paid by U.S. born.

In the sections below, we explore the structure of the current Social Security system, its consequences for benefits and taxes paid by immigrants and U.S. born, and the effects of prorating benefits on the differences in returns realized by each group. The Social Security benefit formula is examined in section 8.2, and its implications for redistribution of benefits among U.S.- and foreign-born individuals are explored. Section 8.3 discusses the effects of adopting an alternative benefit structure for immigrants, where benefits are prorated on the basis of time spent in the United States. Labor force patterns and earnings distributions for immigrants and U.S. born, as reported by respondents to the Health and Retirement Study (HRS), are contrasted in section 8.4. Section 8.5 presents findings based on the matched Social Security earnings histories for HRS respondents. It compares tax payments and the present values of Social Security benefits from own work, spouse and survivor benefits associated with own work, and benefits from the spouse's employment. Redistribution under a prorated system is also explored. Income and wealth distributions for immigrants and native born are examined in section 8.6. Section 8.7 considers participation in transfer programs by immigrants and native born. Social Security benefits and tax contributions are compared for U.S. born and foreign born in section 8.8. Section 8.9 asks whether, on a purely selfish basis, native-born participants would favor having foreign-born individuals participate in the system. Section 8.10 concludes the paper.

8.2 How the Social Security Benefit Formula Differentially Affects U.S. Born and Foreign Born

8.2.1 The Social Security Benefit Calculation

Social Security benefits are determined from past covered earnings history, where past earnings are indexed to age 60 and are averaged to a summary statistic called the average indexed monthly earnings (AIME). For those reaching age 62 after 1991, AIME is calculated using the highest 35 years of indexed earnings. If an individual has covered earnings for fewer than 35 years, then zeros are entered into the AIME calculation for the remaining years.

To illustrate the fundamentals of the calculation, assume that an individual works x_s years under Social Security and that the individual's annual earnings, w_t, increase proportionately to the average wage index. This implies that the indexed wage used in the AIME calculation is either the average wage multiplied by the ratio of years worked divided by 35, or is a constant, w.[1]

The AIME is given in equation (1).

$$
(1) \qquad \text{AIME} = \begin{cases} \dfrac{x_s w}{35} & \text{if } x_s < 35 \\[2ex] \dfrac{35w}{35} = w & \text{if } x_s \geq 35. \end{cases}
$$

From the AIME, the basic benefit, called the primary insurance amount (PIA), is computed. As seen in equation (2), the PIA is a quasi-concave function of the average indexed monthly earnings, where for those reaching 62 in 1997, the function f is 90 percent of the first \$455 of AIME, 32 percent of AIME between \$455 and \$2,741, and 15 percent of AIME over \$2,741. Forty quarters of coverage are required to be eligible for benefits.

$$
(2) \qquad \text{PIA} = f(\text{AIME}).
$$

8.2.2 Benefits and Taxes

If the number of years worked under Social Security is equal to x, the number of years since entering the United States at age a_0, the value of the stream of Social Security benefits at age 62, less the value of the contributions, is given by

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1. This assumption is only approximate. The rules state that wages before age 60 are indexed up to age 60 for the AIME formula, and that wages after age 60 enter the formula unindexed.

(3) $$V = g(a_0 + x)\mathrm{PIA} - \int_{a_0}^{a_0+x} bwe^{-(r-g)(t-62)}dt.$$

In the first term, $g(a_0 + x)$ is the annuitized value of the Social Security benefits for each $1 of PIA, adjusted for the early retirement penalty or late retirement credit, and discounted to age 62. For example, if the individual retires at age 63, the value of a $1 annuity starting at age 63 and discounted to age 62 would be $13.61.[2] The individual would be eligible for 86.7 percent of the PIA (because he retired two years before the normal retirement age), so the value of the function g would be $13.61 times 86.7 percent, or $11.80.

In the second term, b is the Social Security contribution rate. At the time of writing, the rate levied to support old age and survivors benefits is 10.6 percent.[3] The expression $bwe^{-(r-g)(t-62)}$ represents the value of the contributions paid at age t, discounted to age 62.[4]

8.2.3 Differences in Returns to Social Security between U.S. and Foreign Born Arising from Social Security's Progressive Benefit Structure

Table 8.1 illustrates benefits when earnings fall in different brackets of the Social Security formula. The illustration begins with a calculation, looking forward, for a person who is 21 in 1997 and will earn the 1997 maximum taxable wage of $65,400 in real terms for his entire working life. If the 1997 formula continued in place and the 21-year-old spent his entire working life under the U.S. Social Security system, the individual's real yearly retirement benefit at age 65 would be $18,759.[5] Twenty-six percent of the benefit, or $4,914, is due to the first $5,460 worth of earnings, 8 percent of total covered earnings. The next 47 percent of the total benefit is due to earnings in the second bracket, between $5,460 and $32,892. That is, the next 42 percent of total earnings generates 47 percent of the total

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2. This calculation uses a 2.3 percent real interest rate, consistent with the assumptions of the Social Security Trustees.

3. More precisely, from the year 2000 and thereafter, the combined employer and employee rate will be 10.6 percent. Currently it is 10.52 percent. (See Social Security Administration 1996, table 2.A3.)

4. It is also possible to analyze how the change in the value of benefits minus payroll tax payments varies with the amount of time spent outside the United States. Formally, one can conduct such an analysis by differentiating V in eq. (3) with respect to a_0. We do not believe that the timing of immigration decisions is based substantially on the change in the value of Social Security with respect to the date of immigration and do not explore that relationship here. For a related calculation in the context of the decision to participate in a privatized Social Security system, see Gustman and Steinmeier (1998).

5. Given the current financial condition of the Social Security system, the current benefit formula and payroll tax are likely to be changed in the future. But these changes are tangential to the question of how immigrants and U.S. born are treated under Social Security. Thus, the present discussion uses the current parameters of the system. For further discussion of some of the possible changes in the system, see the collected papers in Feldstein (1998).

Table 8.1   **Illustrative Calculation of the Role of Brackets in the Social Security Benefit Formula for U.S. Born and Foreign Born for a Person with Constant Real Yearly Earnings of $65,400**

	First Bracket	Second Bracket	Third Bracket
1. AIME upper limit	$455	$2,741	$5,450
2. AIME upper limit times 12	$5,460	$32,892	$65,400
3. Share of total earnings accounted for by earnings in indicated bracket	.08	0.42	0.5
4. Yearly benefit due to earnings in indicated bracket	$4,914	$8,778	$5,067
5. Share of total benefit due to earnings in bracket	0.26	0.47	0.27
6. Effective upper bracket limit for foreign born who is a U.S. resident for 10 years	$19,110	$115,122	$228,900
7. Effective upper bracket limit for foreign born who is a U.S. resident for 20 years	$9,555	$57,561	$114,450
8. Effective upper bracket limit for foreign born who is a U.S. resident for 30 years	$6,370	$38,374	$76,300

benefit. The remaining 27 percent of the benefit comes from the 50 percent of covered earnings between $32,892 and $65,400.

In the case of an otherwise comparable immigrant who has been in the United States for less than the full 35 years, the Social Security benefit formula counts all years of work outside the United States as years of zero earnings. The effect is to widen the brackets for calculating the average indexed monthly earnings. The extent of widening will depend on how long the immigrant works in covered U.S. employment.

Consider the case illustrated in row 6 of table 8.1, for a foreign-born individual who will divide a full-time work life between his country of origin and the United States, and who also will earn today's maximum covered earnings in real terms in each year of work. Suppose this individual will be in the United States for 10 years. Applying the current formula, the AIME includes as the highest 35 years of earnings, 10 years of maximum earnings and 25 years of zeros. Therefore, instead of receiving benefits that are 90 percent of the first $5,460 per year earned in each year of work, row 6 in table 8.1 indicates that an immigrant who worked 10 years in the United States will have the 90 percent replacement rate extend through the first $19,110 earned per year in the United States. That is, a person who earned $19,110 in real terms in each year of his 10 years in the United States will receive yearly benefits worth 90 percent of the AIME. Analogously, for a person who has been in the United States for 20 years,

average earnings for the first 20 years of up to $9,555 will have a replacement rate of 90 percent. For a person in the United States for 30 years, because 5 years of zeros are mixed into the AIME formula, earnings of up to $6,370 will be subject to a 90 percent replacement rate. The upper limit on the second bracket is raised to $115,122 for a person who has been here for 10 years, $57,561 for a person who has been here for 20 years, and $38,374 for a person who has been here for 30 years. These numbers are reported in the last two rows of table 8.1. Because only $65,400 of income is counted in any year, that means that a person who has been in the United States for 10 years and who has maximum covered earnings in each year will have all income subject to the payroll tax replaced at a marginal rate of at least 32 percent, never entering the third bracket. A person who has been in the United States for 20 years with maximum earnings will have covered earnings replaced at 15 percent only for $7,800 ($65,400 − $57,561) of earnings, with most of his or her benefits calculated using either the 90 percent or the 32 percent marginal rate. Even a person who has been in the United States for 30 years has wider brackets than would apply for the U.S.-born citizen, and would thus enjoy a higher marginal replacement rate than the counterpart U.S.-born citizen.

Using data from the Health and Retirement Study, to be examined in much more detail below, figure 8.1 shows the share of the foreign born who were between the ages of 51 and 61 in 1992; who have more than $5,000 in yearly earnings in years that they worked, so they have earnings spanning more than one bracket; and who will retire with about 10, 20, or 30 years of coverage. Table 8A.1 in the appendix reports the distribution of immigrants in the HRS by the decade of immigration and average real covered earnings in all years worked. According to the numbers in the HRS for sample-age eligibles, about 13 percent of foreign-born men and 9 percent of foreign-born women entered the United States in 1980 or later and earn more than $5,000 per year. These immigrants will end up with about a decade or a bit more of covered work by the time they retire, on average around 1998. About 23 percent of foreign-born men and 16 percent of foreign-born women entered in the 1970s and have average yearly earnings above $5,000 per year; they will end up with about two decades of coverage. And 31 percent of foreign-born men and 29 percent of foreign-born women entered the United States in the 1960s and have average earnings in years worked above $5,000; they will end up with three decades of coverage by the time they retire.

Before examining the actual data on benefits for immigrants and foreign born in the HRS cohort, which depend on the precise history of Social Security rules governing covered earnings and the age and work history of the respondent, it is helpful to determine how the benefit schedule itself works. With a better feeling for how benefits vary with time in the United States and with the earnings for simple, standardized cases, it will be easier
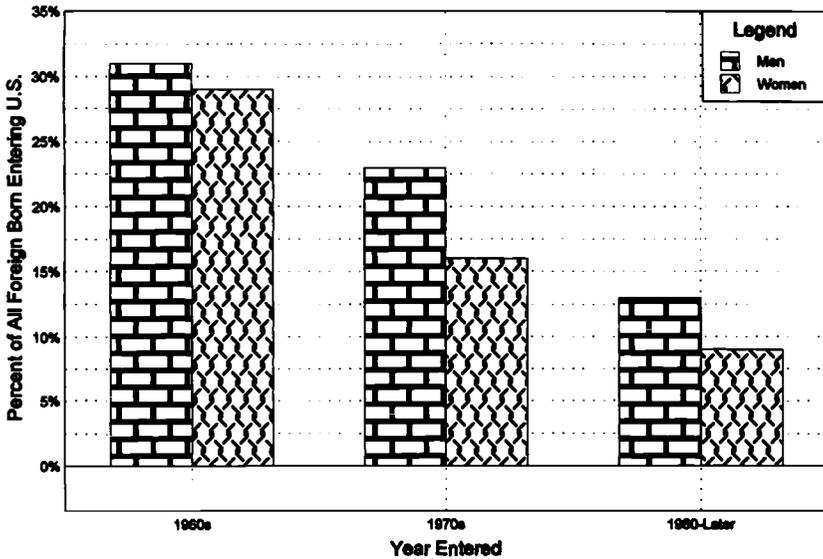
Fig. 8.1   Fraction of all foreign born who entered in the indicated year and earn more than $5,000 per year

to understand what underlies the actual distributions in the population. Moreover, the differences in benefits between immigrants and U.S. born will be not be the same in the future as they were in the past. Maximum covered earnings have increased sharply from levels in earlier decades. Accordingly, because these calculations are forward looking, they generate different relationships between benefits and taxes than will be found in the HRS data examined below.[6]

Simple comparisons may be constructed by assuming various, constant levels of lifetime earnings, and comparing benefits over different periods of covered earnings. The comparisons we make are for a 22-year-old who we assume will retire at age 62 after having constant levels of real yearly earnings, using alternative hypothetical real earnings of $5,000, $10,000 to $60,000 at $10,000 increments, and at the 1997 maximum of $65,400. As above, we will examine outcomes at 10, 20, 30, and 40 years of covered earnings.

Table 8.2 reports benefits that would be received by decades of covered work in the United States at the indicated yearly earnings. One hallmark of the Social Security benefit structure is its progressivity. Comparing benefits for those earning the 1997 maximum covered earnings of $65,400

6. Members of the HRS were subject to relatively low covered earnings in their early work years. As a result, there are smaller advantages to late-arriving immigrants in the HRS than will be true for late-arriving immigrants in younger cohorts.

Table 8.2   Yearly Social Security Retirement Benefits Earned, by Years of Work in the United States, for Hypothetical, Constant Real Yearly Earnings

| | Years of Work under Social Security | | | |
Real Yearly Earnings	10 Years	20 Years	30 Years	40 Years (U.S. Born)
$5,000	$1,286	$2,571	$3,857	$4,500
$10,000	$2,571	$4,995	$5,910	$6,367
$20,000	$4,995	$6,824	$8,653	$9,567
$30,000	$5,910	$8,653	$11,395	$12,767
$40,000	$6,824	$10,481	$13,901	$14,758
$50,000	$7,738	$12,310	$15,187	$16,258
$60,000	$8,653	$13,901	$16,473	$17,758
≥ $65,400	$9,146	$14,364	$17,167	$18,568

with those earning $5,000 a year over a 40-year work life, an income difference of 13 to 1 is associated with a comparable ratio of benefits of 4 to 1. Except for those in the very lowest income brackets, each successive decade of work contributes less than the previous decade's work to the Social Security benefit. The last 10 years of work, although they account for a quarter of the payroll taxes paid, contribute much less to benefits than work in either of the three previous decades. It is not only that the Social Security formula is progressive; once 35 years of work have been accumulated, additional years of work result in a higher payroll tax, but they have no effect on the benefit computation.[7]

Each of the first three decades of work adds about the same amount to yearly Social Security benefits for those earning $5,000 per year. The reason is that those with very low incomes remain in the 90 percent bracket for most of the work life. Those with incomes low enough to remain in the first bracket through their entire work lives are the exception, however. For those earning $20,000 to $40,000 a year, the second and third decades of work contribute roughly the same amount to benefits, which is much less than the contribution from the first decade of work. For those whose real yearly earnings are $20,000 or more, working in the United States for 10 years will entitle them to about half of the total benefit that will be received by a U.S. worker covered for the full career. For those earning $20,000 or more, a second decade in the United States accounts for another 20–30 percent of benefits. The third quarter of work contributes around 15 to 20 percent of the benefits received by a U.S.-born worker covered for 40 years. The final 10 years of work account for a lower share of benefits for all income classes. For all but those earning $5,000 a year,

7. If real earnings in later years were higher than earnings in earlier years, Social Security benefits might increase as a result of additional work after 35 years of work had been accumulated. But such effects are typically modest. See Gustman and Steinmeier (1985, 1991).

the last quarter of covered employment, and of taxes paid, generates 10 percent or less of the total benefits paid as a result of 40 years of work. For those earning $50,000 or above, each decade of work contributes successively less to benefits.

Except for the very first bracket, for working under Social Security for half of the time of a U.S.-born worker, a foreign-born worker earning $10,000 a year or more receives 70–80 percent of the benefit paid to a U.S.-born worker. Only half of the payroll taxes charged to a U.S. worker with comparable earnings over 40 years have been paid by a foreign-born worker and his employer after 20 years of work, however.

8.3 Social Security Benefits When Benefits Are Prorated Based on Time in the United States

There is an alternative to the current system that would maintain the progressive Social Security benefit formula but would no longer provide higher benefit/tax ratios to those who have been in the country for fewer years. The approach involves prorating the benefits of immigrants. Their benefits are reduced for time during prime working age spent in their country of origin, rather than counting such time as years of zero earnings.

8.3.1 Totalization Agreements

Prorating benefits for immigrants is not a new idea. There is a very small program, called totalization, that prorates immigrants' Social Security benefits.[8] The central purpose of totalization agreements is to allow workers who are working abroad to qualify for benefits, even though they have accumulated less than the required 40 quarters of covered earnings under Social Security. Totalization agreements also have the purpose of avoiding double taxation of citizens of one country who are stationed abroad, allowing crediting under one system or the other. In 1995, there were only 36,000 retired worker recipients whose eligibility was based on international agreements, and 51,000 total recipients under totalization agreements. Their average monthly benefit was only $155 (Social Security Administration 1996, 269). The very small size of the population subject to totalization agreements is apparent when it is realized that, overall, there are 2.76 million foreign born in the United States over the age of 65. Of these, 1.7 million are naturalized citizens and 1.05 million are not (U.S. Bureau of the Census 1997, 3).[9]

8. Seventeen countries have totalization agreements, which are bilateral agreements with the United States.

9. Other groups who are outside the Social Security system for part of their work lives have their benefits calculated using special formulas that are designed to limit double dipping. The best known of these formulas limits double dipping by those government workers who were not covered by Social Security. Under windfall elimination provisions, some adjustments

Under totalization, the first decade of work in the United States results in 10/35 of total benefits, each of the next two decades of work increases benefits by another 10/35 of the total PIA, and the last decade of covered work brings in an additional 5/35 of the PIA. In contrast, the formula for prorating proposed below computes the average indexed monthly earnings only over the time the immigrant has spent in the United States, computes the associated primary insurance amount, and then multiplies the PIA by the ratio of years spent inside the United States divided by 35 or 40.[10] Thus, totalization agreements adjust a hypothetical PIA, computed as if the individual worked a lifetime in the United States, in accordance with the ratio of years *worked* to 35. In contrast, the prorating system examined here adjusts the hypothetical PIA to reflect years *residing* in the United States, rather than years worked in the United States.[11] This will preserve the favorable treatment under the Social Security system of those who do not work every year.[12]

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may also be made to the Social Security benefits received by immigrants to the United States who report that they received pension or Social Security benefits based on work that was not covered by the U.S. Social Security system. Specifically, for those receiving a pension or Social Security from uncovered foreign work, and who worked fewer than 20 years in the United States, the replacement rate in the first bracket of the formula determining the Social Security benefit is lowered from 90 percent to 40 percent. This reduces the degree of redistribution under the formula. For those who worked between 20 and 30 years, the bracket replacement rate is prorated between 40 percent and 90 percent. Those who were in covered employment for more than 30 years receive the full 90 percent replacement rate. The reduction is limited to half the benefit under the pension that was not covered by Social Security. Importantly, the factor is not reduced when calculating survivor benefits. Another way that Social Security may be reduced is by a government pension offset. Spouse or survivor benefits are reduced for individuals who worked outside of the Social Security system by the amount of their pension from uncovered work (see Social Security Administration 1997). According to data from the Office of the Actuary supplied to us by the Division of Payment Policy at the Social Security Administration, in June 1996 there were 22,242 primary beneficiaries and 5,547 auxiliary beneficiaries who were subject to windfall elimination provisions but were not former state, local, or federal government employees.

10. For further information, see Social Security Administration, Office of International Policy (1997). These provisions are triggered upon application by the individual.

11. If benefits are to be based on the period spent in residence, rather than spent in employment, it is necessary to define when the period of permanent residence begins. A claimant for old-age insurance already must file proof of age. Prorating benefits would require, for those born outside the United States, that they also show proof indicating the year they first arrived to establish residence. The extensive back and forth flow between California and Texas and elsewhere in the United States and Mexico means that the period of residence is not always continuous. This will complicate the calculation for some, perhaps requiring the adoption of crude or pragmatic criteria for initial residence. According to the HRS data, about 10 percent of foreign born have a first year of Social Security earnings before the year they report coming to the United States, suggesting multiple trips for these respondents.

12. The present procedure under totalization agreements, where benefits are multiplied by the ratio of covered years of work to 35, reduces the level of benefits, and thus the progressivity of the system, for those who only work part of the time they spend in the United States, remaining out of the labor market for the other years. Multiplying benefits by the ratio of years resident in the United States divided by 35 would allow the current progressivity to apply to those who work only a part of their lifetime spent in the United States.

The method used under totalization also ignores the extra taxes paid by U.S. residents who work more than 35 years under Social Security. Therefore, we also examine the alternative of multiplying the PIA by the ratio of years spent in the United States until age 62 divided by 40.[13] Throughout this paper, we will focus on the vast majority of foreign born, who are not subject to totalization agreements, and who we assume do not report that they are entitled to and are receiving pension or Social Security benefits from their country of origin.

8.3.2 Basic Features of Benefit Determination under a Prorated System

Equation (4) is the formula for the modified AIME under a prorated system. It would replace the AIME calculation in equation (1). In calculating the AIME, we exclude, from both the numerator and denominator of the AIME calculations, years in which the individual resided outside of the United States.[14]

$$
(4) \qquad \text{AIME} = \begin{cases} \dfrac{wx_s}{x} & \text{if } x < 35 \\[2ex] \dfrac{wx_s}{35} & \text{if } x \geq 35 \text{ and } x_s < 35 \\[2ex] w & \text{if } x_s \geq 35. \end{cases}
$$

In equation (4), x again is the total number of years the individual is resident in the United States, and x_s is the number of years spent in work covered by Social Security. Note that if the immigrant works all of the years he or she is in the United States, the AIME will always be w with this formula. Thus, in contrast to the present formula, the denominator is reduced by the number of years the individual is out of the country.

The PIA under a modified system would remain a quasi-concave function of the AIME where in the current year the function f is 90 percent of the first \$455 of AIME, 32 percent of AIME between \$455 and \$2,741, and 15 percent of AIME over \$2,741. The PIA modified for different years of participation is given in equation (5).

13. When there is a totalization agreement, windfall gain provisions usually do not apply, and coverage may depend on whether the citizen of one country is stationed for a definite period or indefinitely in the other country.
14. It would be unfair simply to exclude years that the individual is outside the country from the calculations, while still using the high, 35 out of 40 years of earnings. This approach would impose a double penalty for the years out: First, the AIME would be proportionately reduced because of the years out of the system, since zeros would effectively replace years with earnings; and second, the PIA would be proportionately reduced.

Table 8.3   **Ratio of Benefits under a Prorated System with a 35-Year Base to Benefits under the Current System**

Real Yearly Earnings	Years of Work under Social Security			
	10 Years	20 Years	30 Years	40 Years (U.S. Born)
$5,000	1.00	1.00	1.00	1.00
$10,000	0.71	0.73	0.92	1.00
$20,000	0.55	0.80	0.95	1.00
$30,000	0.62	0.84	0.96	1.00
$40,000	0.62	0.80	0.91	1.00
$50,000	0.60	0.75	0.92	1.00
$60,000	0.59	0.73	0.92	1.00
≥ $65,400	0.58	0.74	0.93	1.00

Note: Years of work under Social Security are taken to be identical to years resident in the United States for purposes of these illustrative calculations.

$$
(5) \qquad \text{PIA} = \begin{cases} \left(\dfrac{x}{35}\right) f(\text{AIME}) & \text{if } x < 35 \\ f(\text{AIME}) & \text{if } x \geq 35. \end{cases}
$$

The first factor on the right-hand side of equation (5) simply reflects that the PIA is reduced proportionately for years out of the system.

Table 8.3 reports the ratio of benefits under the prorated system to benefits for the same individuals under the current system. Prorating makes no difference to the benefits of those whose earnings fall entirely in the first earnings bracket, as is the case for those who earn $5,000 per year. For those making $10,000 or more, relative benefits are reduced more when they are prorated, the fewer the years spent in the United States. Those in the United States for 10 years who earned $20,000 or more per year would experience a fall in benefits of 38–45 percent under a prorated system with a 35-year reference period. Among those in the United States for 20 years, for those earning more than $5,000 per year, benefit reductions under a prorated system range from 16 to 27 percent. At 30 years of work in the United States, benefits for those earning more than $5,000 per year would be reduced by 4–9 percent.

One could also argue that one should prorate benefits by multiplying the PIA in equation (5) by the ratio of years of residence in the United States divided by 40. This would recognize that U.S. workers who are employed for more than 35 years pay payroll taxes over the additional years of employment but do not have their benefits increased. All of the figures from table 8.2 for those working less than 40 years would be reduced by 12.5 percent in view of the division of benefits by a higher denominator. For those who work 10 years in the United States and earn $20,000 or

more, prorating over a 40-year period reduces benefits to about half of their value from the current system.

8.3.3   Issues Raised by Spouse and Survivor Benefits
for Prorating of Social Security Benefits

It is possible to establish a taxonomy in which (1) the husband and wife are both immigrants, (2) the husband only is an immigrant, or (3) the wife only is an immigrant. For each group we then can analyze benefits according to whether families fall in one of three groups: (a) the spouse with lowest earnings has not worked enough to qualify for any benefits based on own earnings, (b) the spouse with lowest earnings has earned enough to be a dual beneficiary, or (c) the spouse with lowest earnings is entitled to benefits from own work only, at least until the higher earner dies. One then could examine outcomes for each of these nine cases under a number of alternatives: (i) the present system, (ii) a system where own benefits and benefits payable to the individual's spouse and survivors are reduced when benefits are computed on a prorated basis for foreign born, or (iii) a system where own benefits, entitlement to benefits as a spouse or survivor, and benefits payable to one's own spouse or survivor are all re-duced when benefits are computed on a prorated basis for foreign born. Without going through each of the possible cases, we discuss some of the major considerations.

In the U.S. Social Security system, there are specific rules for determin-ing spouse and survivor benefits. When an individual is entitled both to old-age benefits based on own earnings and also to spouse or survivor benefits, the procedure is to pay benefits based on own earnings first. If spouse or survivor benefits are below benefits based on own earnings, no spouse or survivor benefits are paid. If spouse or survivor benefits exceed benefits based on own earnings, then the difference is paid on top of the payment based on own earnings, and the recipients are called dual benefi-ciaries. In the end, the individual receives the highest level of benefits to which he or she is entitled.[15]

The structure of the Social Security benefit formula increases the likeli-hood of a spouse collecting benefits based on own earnings rather than on the record of the primary earner. For example, the progressivity of the benefit formula makes it easier for the secondary earner in a household to earn at least half of the benefits of the primary earner. To be entitled to

15. The relative sizes of the different groups among the retired in the overall U.S. popula-tion in 1994, when there were 20.8 million women beneficiaries age 62 or over, are as follows: group 1, 8 million women 62 or older in 1994 were entitled to benefits as a wife or widow, not having worked enough to qualify for any benefits based on own earnings history; group 2, 5.3 million were dual beneficiaries, receiving spouse or survivor benefits; and group 3, 7.5 million were entitled to workers benefits only (from Social Security Administration 1996, table 5.A.14).

half of the benefits of the primary earner, the spouse of a primary earner whose indexed yearly earnings fall at the second bracket amount or beyond—that is, whose average indexed monthly earnings multiplied by 12 is $32,892 or more in 1997—must earn one-third of the amount earned by the primary earner.[16] However, from the perspective of the secondary earner, total benefits accrued as a result of own earnings are not much bigger than the spouse benefits called for under the system.

Accordingly, under the current system, the spouse can easily recover half of the benefits that would be earned by a primary earner in the household. This means that should a rule be adopted that reduces primary, spouse, and survivor benefits for a foreign-born individual on the basis of years spent out of the country, a working spouse would not experience a proportionate loss in benefits, especially if the spouse were U.S. born. It also means that unless a foreign-born spouse has not only own benefits but also spouse and survivor benefits reduced by years spent outside the United States, then in the case of families with one immigrant and one U.S.-born spouse, having worked outside of the United States would continue to present a special advantage. More generally, if only own benefits are reduced for immigrants on the basis of time spent overseas, but spouse and survivor benefits are not reduced, the adjustment in benefits on the basis of immigrant status would be mitigated, as roughly one-third of benefits earned by foreign-born men accrue in the form of spouse and survivor benefits. Analogously, one might wish to adjust benefits for spouses and survivors who are immigrants when the primary earner in the family is not an immigrant.

When simulating the effects of prorating benefits, we assume that spouse and survivor benefits deriving from the benefits of a principal earner are adjusted whenever the principal earner's benefits are adjusted. But we do not reduce spouse and survivor benefits for a foreign-born spouse when the primary earner does not experience a reduction in benefits.

8.4   Labor Force Patterns and Earnings for Immigrants and Native Born

Before comparing the Social Security outcomes between U.S. born and foreign born, it is useful to compare these populations with regard to various labor market outcomes. Table 8.4 makes this basic comparison using data from the Health and Retirement Study.

The HRS population includes households in which there is a person

16. For a family whose primary earner has earnings at the second bracket point—that is, who has indexed earnings of $32,892 per year—the primary earner will receive $13,692 per year. To earn half of those benefits, $6,841, the secondary earner must have average indexed yearly earnings of $11,482. The calculation for the primary earner who has $50,000 in average indexed yearly earnings also shows that it takes about 30 percent of the primary earner's income for a spouse to be entitled to half the benefit.

Table 8.4   **Work, Retirement, and Related Descriptive Statistics**

	All		U.S. Born		Foreign Born	
	Men	Women	Men	Women	Men	Women
No current job (%)	20.6	38.9	20.6	38.0	20.1	46.6
Working < 400 hours/year (%)	1.0	2.0	1.0	2.1	0.5	1.2
Working 400–1,499 hours/year (%)	6.5	13.3	6.4	13.7	7.6	9.8
Working 1,500 hours or more (%)	70.9	45.2	70.9	45.6	71.3	41.0
Average hours of work by employed	2,222	1,829	2,227	1,824	2,168	1,884
Percent in agriculture	4.9	1.3	4.7	1.2	6.6	2.3
Percent union	24.8	18.9	24.9	18.5	23.6	22.3
Percent self-employed	23.3	13.9	23.3	13.6	22.4	16.3
Percent retired	12.4	11.9	12.9	12.5	6.9	6.4
Percent partially retired	7.6	5.1	7.8	5.4	5.7	2.6
Percent not retired	77.3	66.6	76.6	66.6	85.2	66.8
Average age	55.9	55.9	55.9	55.9	55.6	55.8
(Expected) full retirement age	63.6	63.2	63.5	63.2	64.3	63.6
Percent never retire	11.9	9.5	12.2	9.7	9.1	7.8
Percent < high school	24.4	25.9	22.8	23.8	40.8	44.7
Percent high school degree	32.7	40.1	34.2	41.8	17.6	24.4
Percent some college	19.1	18.9	19.8	19.5	11.8	13.9
Percent college degree	10.4	7.3	10.3	7.0	11.7	9.9
Percent graduate school	13.4	7.8	12.9	7.9	18.2	7.1
Percent married	83.4	68.6	83.1	68.6	86.5	68.2
Husband's age minus wife's age	3.7	3.1	3.7	3.1	4.0	3.8
Percent white and other	84.9	81.9	87.6	85.1	57.5	53.9
Percent black	8.4	10.6	8.8	11.1	4.6	6.1
Percent Hispanic	6.7	7.4	3.6	3.8	37.9	40.0
Percent spouse foreign born	8.2	5.7	3.1	1.7	60.9	41.5
Percent receiving Social Security	5.2	4.9	5.4	4.9	3.1	5.4
Percent expecting Social Security	87.0	84.9	87.2	85.6	85.5	79.2
Average 1991 earnings ($)	40,500	19,246	40,076	19,126	44,847	20,485
Unweighted observations	4,589	5,164	4,152	4,617	437	547

Source: Health and Retirement Study, wave 1.

Note: Sample is all age eligibles. Percentages in each category will not add to 1.0 if information for particular variables is missing for some observations.

who is 51–61 years old in 1992. There are 12,652 observations, but only 9,824 of these household members were born between 1931 and 1941. Of these, 9,753 are in households where the person designated as the financially knowledgeable respondent has cooperated with the survey.[17]

On average, it can be seen that the immigrant population does not differ sharply from the population of U.S. born. Notice that almost 80 percent of U.S.- and foreign-born men are working. There are fewer (53 percent) foreign-born women working than native-born women (61 percent). U.S.-born men and women are twice as likely to call themselves retired as are the foreign born. Among those working, U.S.-born men work more hours, while U.S.-born women work fewer hours than do foreign-born men and women respectively, but the differences in hours of work are small. The U.S.-born men are less likely to have earned a graduate degree (13 percent versus 18 percent), but the U.S.-born men and women are also much less likely to report having earned less than a high school degree (41 percent versus 23 percent among men, and 45 percent versus 24 percent among women). Foreign born are roughly 38 percent Hispanic, versus about 4 percent for U.S. born.

Three other figures in table 8.4 are particularly noteworthy. First, 61 percent of the foreign-born men and 42 percent of the foreign-born women in the HRS sample, have a foreign-born spouse.[18] This means that the question of how to treat Social Security spouse and survivor benefits in a household with only one immigrant is an important issue. Second, there is only a small difference in the proportions of U.S. born and foreign born who expect to receive Social Security benefits when they retire. While 87 percent of U.S.-born men expect to receive Social Security benefits in the future, 86 percent of foreign-born men expect to receive Social Security benefits; and for women, the comparable figures are 86 percent for U.S. born and 79 percent for foreign born. The last point to make with the data in table 8.4 is that earnings between U.S. born and foreign born are roughly comparable. Earnings for U.S.-born men in 1991 were $40,076, while they were $44,847 for foreign-born men. The medians are closer, as

17. In those parts of our analysis that pertain to the household, or in which spouse benefits are relevant, we include information for spouses who are out of age range. When one spouse in a household refuses to cooperate with the survey, the data for the missing spouse is hot decked. When spouses are hot decked, we run through the procedure twice and average the results. Observations are dropped when the spouse who refuses to cooperate is designated to report financial data. Data on earnings in years from the survey date until the expected retirement date are stochastically estimated using earnings from the years before the survey. Consequently, there are small differences in means that depend on the precise match that is made by the stochastic routine. Thus, one should expect some measures of central tendency for economic variables reported in these tables to differ slightly from those in other studies based on the HRS wave 1 responses.

18. When spouses are hot decked, for those in the survey with a spouse who would not be interviewed, immigrant status is one of the criteria used. The probability of having a foreign-born spouse for each group (natives and immigrants, male and female) is taken from table 8.4.

are the comparable figures for U.S.- and foreign-born women, suggesting that we are not dealing here with two populations that have very different overall levels of income. Any disparate treatment of immigrants and native born by Social Security will reflect program differences, rather than differential treatment under Social Security of those with major differences in incomes. We return to these issues below when we examine the distributions of income and wealth for U.S. born and foreign born.

8.5 Social Security Benefits for the Sample of Immigrants in the Health and Retirement Study

8.5.1 Current System

A major strength of the HRS for use in the present analysis is that it provides Social Security earnings records for survey participants, as well as a great deal of information on the labor market history, income, and wealth of survey respondents.[19] Also, the HRS oversamples Hispanic respondents, increasing the number of observations available for the immigrant portion of the sample. Altogether, about 10 percent (1,294) of the sample of 12,652 HRS respondents, and 9 percent of the weighted count, are foreign born.[20] The mean time of arrival in the United States is mid-1966, which means that by age 62, the average foreign-born sample member will have been in the United States for 30 years.

Social Security records were obtained from the Social Security Administration for 6,950 observations, amounting to 70 percent of the full within-age-range HRS sample. For those without an earnings history, the work history was estimated from the self-reported job history in wave 1, and from a battery of questions in wave 3 inquiring about years of previous work and the years of work that were not covered by Social Security.

Table 8.5 describes covered work history by gender and immigrant status. Three types of information are reported in the table: percent of years with nonzero Social Security earnings, quarters of Social Security coverage, and average real covered earnings in nonzero years of coverage.[21] From table 8.5, the ratio of foreign-born women to men is 1.25 to 1 (547/

19. For detailed discussions of the labor market, Social Security, pension, and wealth data in the HRS, see Gustman et al. (forthcoming).

20. Among the foreign born in the HRS sample, 97 are from Asia, 62 are from Canada, 112 are from the Caribbean, 60 are from Central America, 117 are from Cuba, 67 are from Germany, 53 are from Great Britain, 318 are from Mexico, and 85 are from South America. The average age at arrival is about 30. These data are taken from simple tabs of variables produced at the Institute for Social Research. The country of origin is suppressed on the special version of the HRS 1 tape that is supplied with the restricted Social Security earnings histories. As a result, we will not be able to conduct any analysis of the relation between Social Security variables and country of origin.

21. The results are very close between the full sample and the subsample with an attached Social Security record.

Table 8.5   **Work History from Social Security Record Including Imputations for Those without a Social Security Record**

	All		U.S. Born		Foreign Born	
	Men	Women	Men	Women	Men	Women
Percent of years with nonzero earnings since age 21	82.0	51.7	84.1	53.3	60.4	37.6
Quarters of coverage	119.0	72.0	122.4	74.4	83.4	50.0
Average earnings in nonzero years of coverage ($)	24,635	12,296	24,702	12,368	23,954	11,653
Observations	4,589	5,164	4,152	4,617	437	547

Source: Health and Retirement Study, age-eligible individuals for whom a Social Security earnings record was obtained.

437), while the ratio of U.S.-born women to men is 1.11 to 1 (4,617/4,152). Foreign-born men have about 72 percent of the years of nonzero earnings of U.S.-born men (60.4/84.1). Foreign-born women have 71 percent of the years of nonzero earnings of U.S.-born women (37.6/53.3). The shares of quarters of coverage are 68 percent for foreign- versus U.S.-born men (83.4/122.4), and 67 percent for women (50.0/74.4).

In table 8.4, average earnings in nonzero years of coverage are roughly comparable for U.S.- and foreign-born respondents. For males, U.S. born average $24,702 in covered earnings, while foreign born average $23,954. Comparable figures for women are $12,368 for U.S. born and $11,653 for foreign born. In contrast to the Social Security earnings in table 8.5, in table 8.4, 1991 self-reported earnings were slightly higher for foreign born than for U.S. born of the same gender.

U.S.-born women had exactly half of the covered earnings of men in years that they worked ($12,368/$24,702) and 61 percent (74.4/122.4) of the quarters of coverage of U.S.-born men, while foreign-born women had 49 percent of the earnings of foreign-born men ($11,653/$23,954) and 60 percent of the quarters of coverage (50/83.4). Thus, relative differences in covered earnings and quarters of coverage between immigrants and native born do not vary by gender.

To provide further insight into the work histories of immigrants, table 8.6 reports these same data by decade of arrival into the United States. By raw count, 55 percent of the immigrants in the HRS entered the United States between 1960 and 1980 (529/957). Forty percent of the immigrants (379/957) arrived in the United States after 1970, which means they typically will have a decade or two of coverage under Social Security when they retire. Earnings of those arriving since 1970 are lower than the earnings of those arriving in earlier years.

Table 8.7 reports the present discounted value of taxes paid to date and

Table 8.6　　　　**Work History from Social Security Record by Year of Entry to United States**

	Before 1940		1940–49		1950–59		1960–69		1970–79		1980 or later	
	Men	Women	Men	Women	Men	Women	Men	Women	Men	Women	Men	Women
Percent nonzero earnings years since age 21	83.1	54.0	86.8	61.9	83.2	44.1	70.1	45.9	45.2	28.7	18.1	8.9
Quarters of coverage	125.5	83.4	129.9	82.5	117.3	61.0	95.0	59.4	61.8	37.0	24.4	11.7
Average of nonzero covered earnings ($)	26,751	12,469	26,333	13,577	25,514	12,376	27,316	13,632	22,911	9,983	15,646	6,933
Observations	3	8	16	26	94	125	134	172	108	115	73	83

Source: Health and Retirement Study, age-eligibles who said yes to being born outside the United States and reported year when they entered.

Note: When Social Security records are not reported, earnings histories are estimated from self-reported data.

Table 8.7   **Social Security Taxes Paid and Value of Benefits, Assuming Retirement at Expected Age**

	All		U.S. Born		Foreign Born	
	Men	Women	Men	Women	Men	Women
Discounted taxes ($)	124,630	46,836	127,395	47,917	96,253	37,140
PIA (1992$)	9,708	4,996	9,856	5,096	8,196	4,095
	Benefits: Based on Respondent Earnings ($)					
Own	76,925	48,512	78,132	49,537	64,542	39,309
Spouse	5,641	309	5,686	319	5,180	218
Survivor	18,218	460	18,469	453	15,634	518
Total	100,784	49,281	102,287	50,310	85,356	40,045
	Benefits: Based on Spouse Earnings ($)					
Own	37,876	57,157	38,456	57,997	31,925	49,622
Spouse	425	5,468	424	5,528	440	4,931
Survivor	672	16,532	669	16,699	701	15,029
Total	38,973	79,157	39,549	80,224	33,066	69,582
Total household taxes ($)	162,316	131,769	165,788	134,617	126,681	106,207
Total household benefits ($)	139,757	128,438	141,836	130,534	118,422	109,627
Observations	4,589	5,164	4,152	4,617	437	547

Source: Health and Retirement Study, age-eligibles.

Note: For those without a Social Security record, benefits are imputed based on self-reported earnings histories in waves 1 and 3. Payroll tax payments are inflated to 1992 values using the interest rate on 10-year U.S. government bonds. Benefits are deflated using real interest rates from Social Security Administration intermediate projections (Federal Old Age and Survivors Insurance and Disability Insurance Trust Fund 1995, table II.D1).

benefits to be received, by immigrant status.[22] The calculation assumes that immigrants retire at their expected retirement ages.[23] In computing benefits for each spouse in a marriage, we follow the rules that provide the highest benefits to which a spouse is entitled. The spouse and survivor benefits attributed to the male in the family consist only of the additional benefits the spouse has coming beyond the benefits paid based on the female's own work. Only if the wife had no earnings would the spouse and survivor benefits represent the full amount of benefits the wife will receive. Husbands' benefits are treated symmetrically.

By the time they retire, all men have paid taxes averaging $124,630 in 1992 dollars.[24] The respondent's own benefits add up to $76,925 for men. Spouse and survivor benefits due to their earnings history also generate an additional $23,859 in benefit value from the earnings of men. Women pay $46,836 in taxes and have accrued own benefits worth $48,512, while the spouse and survivor benefits that women have earned from their own work are worth only $769. Altogether, when the calculation is made for all households with a male in them, household benefits average $139,757 and taxes paid amount to $162,316, while when the calculation is made for all households with a woman in them, benefits average $128,438 per household and taxes average $131,769.

22. In computing accrued benefits, we count the value of benefits for all respondents who will accrue 32 covered quarters by the time they reach their expected retirement age. Quarters of coverage are based on earnings. Specifically, in 1997, each $670 earned generates one-quarter of coverage. Thus, our calculations assume that someone who is within 8 quarters of coverage when reaching expected retirement age would be willing to earn another $2,680 per year in real terms over the next two years in order to qualify for Social Security benefits.

23. As noted in table 8.4 above, foreign-born men expect to retire about 0.8 of a year later than U.S.-born men, while foreign-born women expect to retire 0.4 of a year later. However, 12.2 percent of U.S.-born men report they never expect to retire, compared to 9.1 percent of foreign-born men. The comparable figures for U.S.- and foreign-born women are 9.7 percent and 7.8 percent, respectively.

In constructing table 8.7 and subsequent tables, if an individual reported an expected age of retirement over 70, or if the individual expected never to retire, the expected retirement age was taken to be 70. If the individual did not report an expected retirement age, the expected retirement age was taken to be 62. 1991 is the last year in the Social Security record. If the retirement age was less than current age, no projection was made. The individual was assumed to be retired, and the value as of 1991 was used. As previously, we counted as zero any benefits accruing to those who will have less than 32 quarters of coverage by the time they retire. Post-1991 earnings are randomly chosen from the five-year period 1987–91 for all years up to the individual's expected retirement age. The expected date of retirement question (K13) inquires about date of complete retirement. To the extent that some individuals will partially retire, and have not done so by 1991, this will cause some overstatement of earnings, taxes, and, perhaps, benefits.

24. Nominal taxes paid in earlier years are inflated to 1992 values using the nominal interest rate on 10-year government bonds. As we will see below, only modest differences result when taxes are inflated using the interest rate realized on the Social Security portfolio. Benefits are deflated to 1992 values using the Social Security Administration's intermediate forecast of a future interest rate (Federal Old Age and Survivors Insurance and Disability Insurance Fund 1995, table II.D.1). Many other assumptions may be made in making money's worth calculations. See Leimer (1995) for a further discussion.

Table 8.8 reports similar data by decade of entry into the United States.[25] Men entering the United States between 1970 and 1979 have paid 55 percent ($69,985/$127,395) of the taxes paid by U.S. born. However, they have accrued 67 percent ($68,330/$102,287) of the benefits that will be paid to U.S. born and their spouses based on own earnings, and 70 percent ($54,382/$78,132) of the man's benefit earned from own work.

Table 8.9 reports the ratios of taxes paid by foreign born to taxes paid by U.S. born and the ratios of benefits to be received, as of 1992, all assuming retirement at the expected date. Tax payments reported in column (1) are assumed to be the same whatever the system in place. Thus, columns (1) and (2) report the taxes and benefits under the current system. Given the earlier finding that those who will be in the United States for only a decade or two receive the most favorable treatment under Social Security, data are reported separately for those who arrived in the United States in the 1970s and after 1980. Table 8.10 reports the ratio of the value of benefits, assuming work to retirement date, over the value of taxes paid. Columns (1) and (4) report the results under the current system.

By the time they retire, foreign-born men in the HRS cohort will pay about 76 percent ($96,253/$127,395) of the taxes paid by U.S.-born men, while total benefits based on own work will be about 83 percent ($85,356/$102,287) of the benefits received by U.S.-born men. Foreign-born women will pay 78 percent ($37,140/$47,917) of the taxes paid by U.S.-born women, and will receive 80 percent ($40,045/$50,310) of the benefits.

Consider men who entered the United States in 1970 to 1979. At retirement, discounted taxes paid will amount to $69,985. The comparable figure for U.S. born is $127,395. Thus, the foreign-born male who entered in the 1970s will pay 55 percent of the taxes paid by a U.S.-born male. Total family benefits from own earnings for the foreign-born male who entered the United States in the 1970s are $68,330. This amounts to 67 percent of the family benefits from own earnings of $102,287 for U.S. born. A part of this difference is due to the difference in covered earnings. As seen in table 8.6, a foreign-born man who entered the United States in the 1970s earns $22,911 in average nonzero covered earnings, while for the U.S.-born male, nonzero covered earnings averaged $24,024. A foreign-born woman who entered in the 1970s will pay 57 percent ($27,419/$47,917) of the taxes paid by a U.S.-born woman. Benefits will be 67 percent ($33,456/$50,310) of the benefits received by a U.S.-born woman.

By the time he reaches his expected retirement age, a man who entered

25. The differences in table 8.8 between taxes paid and benefits do not vary as sharply with date of arrival as did the differences discussed in section 8.2. The calculations in section 8.2 were steady state calculations made under a constant tax structure. Those in the HRS were affected by a changing Social Security tax structure, where covered earnings and tax rates increased over time. Therefore, differences in taxes paid would not be proportionate to years spent in covered employment, even if earnings were held constant over time.

Table 8.8   **Social Security Taxes Paid and Value of Benefits, Assuming Retirement at Expected Age, by Year Immigrant Entered the United States**

	Before 1940		1940–49		1950–59		1960–69		1970–79		1980 or later	
	Men	Women	Men	Women	Men	Women	Men	Women	Men	Women	Men	Women
Discounted taxes	146,735	41,706	138,374	59,919	131,151	41,405	116,527	48,639	69,985	27,419	23,847	8,460
PIA (1992$)	10,642	4,402	10,141	5,954	10,098	4,337	9,608	5,125	6,926	3,407	3,565	1,614
	Benefits: Based on Respondent Earnings ($)											
Own	82,433	47,183	83,003	57,282	79,387	42,795	75,992	48,314	54,382	32,462	26,733	15,014
Spouse	7,950	0	11,152	451	7,743	125	5,517	89	2,904	479	2,114	331
Survivor	13,607	821	26,819	255	22,882	540	16,415	623	11,044	514	6,784	318
Total	103,989	48,003	120,974	57,989	110,013	43,459	97,924	49,026	68,330	33,456	35,632	15,664
	Benefits: Based on Spouse Earnings ($)											
Own	45,416	83,839	20,641	52,146	28,367	64,479	38,700	54,026	36,991	41,612	18,166	18,837
Spouse	0	9,199	0	3,043	545	7,219	56	5,099	464	3,812	1,037	2,150
Survivor	29	23,708	57	15,400	458	21,305	793	14,734	685	12,917	1,069	6,627
Total	45,445	116,746	20,698	70,589	29,370	93,002	39,550	73,859	38,139	58,341	20,272	27,614
Total household taxes ($)	173,982	155,951	155,768	137,723	156,634	133,320	155,151	127,893	107,665	80,873	37,766	28,017
Total household benefits ($)	149,434	164,750	141,673	128,578	139,383	136,462	137,474	122,884	106,470	91,797	55,904	43,278
Observations	3	8	16	26	94	125	134	172	108	115	73	83

Source: Health and Retirement Study, age-eligibles who said yes to being born outside the United States and reported year when they entered.

Note: See table 8.7 for details on the construction of the present value measures.

Table 8.9   **Ratios of Social Security Taxes for Foreign Born to U.S. Born, and of Benefits, under Different Schemes for Prorating Benefits of Foreign Born**

		Ratio of Benefits		
Relevant Group	Ratio of Taxes (1)	Current Rules (2)	Prorate over 35 Years (3)	Prorate over 40 Years (4)
All foreign-born men	0.76	0.83	0.78	0.72
All foreign-born women	0.78	0.80	0.74	0.68
Foreign-born men arriving in 1970s	0.55	0.67	0.55	0.48
Foreign-born women arriving in 1970s	0.57	0.67	0.57	0.50
Foreign-born men arriving in 1980s	0.19	0.35	0.24	0.21
Foreign-born women arriving in 1980s	0.18	0.31	0.21	0.18

Note: Calculations are made on the basis of expected retirement dates using HRS data. See table 8.7 for details on the construction of the present value measures.

the United States in the 1980s will pay taxes of $23,847. This is 19 percent ($23,847/$127,395) of the taxes paid by U.S. born. Benefits based on own earnings are $35,632 for a man entering in the 1980s, or 35 percent ($35,632/$102,287) of the benefits for a U.S.-born man. For the man entering in the 1980s, benefits well exceed taxes, while the opposite is true for the U.S. born. A foreign-born woman who entered in the 1980s will pay 18 percent ($8,460/$47,917) of the taxes paid by a U.S.-born woman. Benefits for the late entrant are 31 percent ($15,664/$50,310) of the benefits of a U.S.-born woman.

As seen in columns (1) and (4) in table 8.10, on average, both U.S.-born men and foreign-born men pay more in taxes than they will receive in benefits: Benefits are 80 percent ($102,287/$127,395) of taxes for U.S.-born men and 89 percent ($85,356/$96,253) for foreign-born men. Women receive slightly higher benefits than they pay in taxes whether U.S.-born or foreign born: Benefits are 105 percent ($50,310/$47,917) of taxes for U.S.-born women and 108 percent ($40,045/$37,140) for foreign-born women.

For those men who entered in the 1970s, their benefits are just slightly below taxes paid. For men entering in 1980 or later, benefits are 49 percent ($35,632/$23,847) higher than taxes paid, rather than 80 percent of taxes, as they are for U.S. born. For women entering 1980 or later, benefits are 85 percent higher than taxes paid ($15,664/$8,460).

8.5.2   Benefits under a Prorated System

The easiest way to isolate the effects of the progressive benefit formula on the benefits and costs of Social Security for U.S. born and foreign born

Table 8.10   **Ratios of Social Security Benefits from Own Earnings to Social Security Taxes Paid for U.S. Born and Foreign Born**

	Men			Women		
Relevant Group	Current Rules (1)	Prorate over 35 Years (2)	Prorate over 40 Years (3)	Current Rules (4)	Prorate over 35 Years (5)	Prorate over 40 Years (6)
U.S. born	0.80	0.80	0.80	1.05	1.05	1.05
All foreign born	0.89	0.83	0.77	1.08	1.00	0.92
Immigrants arriving 1970–79	0.98	0.81	0.71	1.22	1.05	0.92
Immigrants arriving after 1980	1.49	1.02	0.90	1.85	1.23	1.08

Note: Calculations are made on the basis of expected retirement dates using HRS data. See table 8.7 for details on the construction of the present value measures.

is to compute benefits using a prorated formula and to compare the pro-rated benefits with benefits under the current system. The approach we take to prorating is consistent with equations (4) and (5) above. For each respondent, we take the earlier of the year entering the United States or the first year with positive Social Security earnings. That year is subtracted from the year the individual turns 62. This difference indicates how many years are to be counted in computing the AIME. Earnings are then aver-aged over the indicated period, whether there are covered earnings in each year or not. The average AIME is then inserted into the PIA formula in equation (5), where the AIME is multiplied by the ratio of the years spent in the United States divided by 35.

Tables 8.11 and 8.12 report benefits at the expected retirement age when this prorated formula is used with a 35-year base period. Table 8.13 reports the percentage point reduction from prorating benefits of immigrants. If benefits were prorated for the foreign born in the HRS sample using a 35-year base period, foreign-born men would have benefits at the expected retirement age reduced by 6.8 percent ($79,575/$85,356), while they would be reduced by 7.3 percent ($37,108/$40,045) for foreign-born women.

From table 8.11, column (4), we see that on average, having paid 76 percent ($96,253/$127,395) of the taxes paid by U.S. born, after prorating their benefits, foreign-born men and their spouses would receive 78 per-cent ($79,575/$102,309) of the benefits for their families that are received by U.S. born (total household benefits of households with a foreign-born male would also be 78 percent [$111,045/$141,804] of those for U.S. born).[26] As seen in table 8.9, the benefit ratio is down from a ratio of 83 percent for benefits received by foreign- versus U.S.-born men at the ex-pected retirement age under the current formula. Some difference remains between the ratios of benefits received and taxes paid of foreign- to U.S.-born men in the face of prorating. The source of that difference is the extra taxes paid by U.S. residents who work more than 35 years.

Prorating over a 35-year base period, foreign-born women pay 78 per-cent ($37,140/$47,917) of the taxes paid by U.S.-born women, while receiv-ing 74 percent ($37,108/$50,313) of the benefits. Thus, the 35-year base period is adequate for adjusting for differences in benefit and tax ratios between U.S.- and foreign-born women.

Comparing table 8.12 with table 8.8, it can be seen that for foreign-born men who entered the United States in the 1970s, as a result of prorating benefits for the years spent in the United States out of a 35-year base period, total accrued benefits based on own earnings would fall to $56,519

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26. Notice that benefits received by U.S. born differ slightly between tables 8.7 and 8.11. The reason is that foreign-born spouses of U.S. born have their benefits based on own earn-ings reduced under prorating. As a result, the spouse and survivor benefits credited to the U.S.-born spouse increase. These differences are very small, however. For example, for U.S.-born men, the survivor benefit increases under prorating from $18,469 to $18,485.

Table 8.11   **Social Security Taxes Paid and Value of Benefits Assuming Retirement at Expected Age, Prorating Benefits for Foreign Born with a 35-Year Base Period**

	All		U.S. Born		Foreign Born	
	Men	Women	Men	Women	Men	Women
Discounted taxes	124,630	46,836	127,395	47,917	96,253	37,140
PIA (1992$)	9,660	4,966	9,856	5,096	7,658	3,803
	Benefits: Based on Respondent Earnings ($)					
Own	76,545	48,227	78,132	49,537	60,257	36,470
Spouse	5,622	307	5,692	320	4,903	198
Survivor	18,124	454	18,485	456	14,415	441
Total	100,291	48,989	102,309	50,313	79,575	37,108
	Benefits: Based on Spouse Earnings ($)					
Own	37,690	56,843	38,406	57,946	30,343	46,938
Spouse	424	5,451	423	5,522	434	4,812
Survivor	669	16,434	666	16,675	693	14,263
Total	38,783	78,727	39,495	80,144	31,470	66,012
Total household taxes ($)	162,316	131,769	165,788	134,617	126,681	106,207
Total household benefits ($)	139,074	127,716	141,804	130,457	111,045	103,120
Observations	4,589	5,164	4,152	4,617	437	547

Source: Health and Retirement Study, age-eligibles.

Note: See table 8.7 for details on the construction of the present value measures.

Table 8.12 Social Security Taxes Paid and Value of Benefits Assuming Retirement at Expected Age, Based on Year Immigrant Entered the United States and Prorating Benefits for Foreign Born with a 35-Year Base Period

	Before 1940		1940–49		1950–59		1960–69		1970–79		1980 or Later	
	Men	Women	Men	Women	Men	Women	Men	Women	Men	Women	Men	Women
Discounted												
taxes	146,735	41,706	138,374	59,919	131,151	41,405	116,527	48,639	69,985	27,419	23,847	8,460
PIA (1992$)	10,642	4,294	10,113	5,755	10,036	4,222	9,255	4,858	5,834	2,938	2,504	1,075
Benefits: Based on Respondent Earnings ($)												
Own	82,433	46,016	82,737	55,350	78,903	41,687	72,997	45,663	45,705	27,882	18,685	9,942
Spouse	7,950	0	11,137	360	7,846	125	5,382	109	2,311	403	1,336	274
Survivor	13,607	751	26,747	225	22,931	448	15,593	578	8,504	385	4,279	228
Total	103,989	46,767	120,621	55,935	109,681	42,260	93,972	46,350	56,519	28,671	24,300	10,445
Benefits: Based on Spouse Earnings ($)												
Own	45,416	83,839	20,641	51,968	27,813	63,992	37,398	51,724	33,900	35,791	15,992	14,070
Spouse	0	9,199	0	3,376	543	7,363	88	5,092	397	3,286	1,051	1,634
Survivor	29	24,164	63	16,136	457	21,190	759	14,289	707	10,816	1,066	4,993
Total	45,445	117,202	20,705	71,480	28,813	92,545	38,246	71,104	35,004	49,893	18,109	20,698
Total household												
taxes ($)	173,982	155,951	155,768	137,723	156,634	133,320	155,151	127,893	107,665	80,873	37,766	28,017
Total household												
benefits ($)	149,434	163,970	141,326	127,415	138,494	134,805	132,217	117,454	91,523	78,563	42,409	31,143
Observations	3	8	16	26	94	125	134	172	108	115	73	83

Source: Health and Retirement Study, age-eligibles who said yes to being born outside the United States and reported year when they entered.

Note: See table 8.7 for details on the construction of the present value measures.

Table 8.13   **Percentage Point Reduction in Immigrants' Benefits Due to Prorating**

	Base Period 35 Years		Base Period 40 Years	
Relevant Group	Men	Women	Men	Women
All foreign born	6.8	7.3	13.6	15.1
Immigrants arriving 1970–79	17.3	14.3	27.6	24.9
Immigrants arriving after 1980	31.8	33.3	40.0	41.7

Note: Calculations are made on the basis of expected retirement dates using Health and Retirement Study data. See table 8.7 for details on the construction of the present value measures.

from $68,330. Thus, from table 8.13, accrued benefits for foreign-born men would be reduced by 17.3 percent for those men who entered in the 1970s. As a result, from the third row of table 8.9, it can be seen that foreign-born men who entered in the 1970s would pay 55 percent of the taxes paid by U.S. born ($69,985/$127,395), and that if benefits were prorated using a 35-year base period, they and their spouses would receive 55 percent of the benefits ($56,519/$102,309). For those men who entered in the 1980s, if benefits were prorated using a 35-year base period, accrued benefits would fall from $35,632 to $24,300, with the decline seen in table 8.13 to be 32 percent. From the fifth row of table 8.9, men who entered the United States in the 1980s would pay 19 percent of the taxes paid by U.S. born ($23,847/$127,395), while they and their spouses would receive 24 percent of the benefits ($24,300/$102,309) received by U.S. born. From table 8.13, women who entered the United States in the 1970s would find their benefits reduced from prorating by 14 percent ($28,671/$33,456), while women who entered the United States in the 1980s would find prorating using a 35-year period reduced their benefits by 33 percent ($10,445/ $15,664).

In table 8.10, we see that the ratios of benefits to taxes paid for foreign born begin to approach the ratios for U.S. born once benefits are prorated using a 35-year base. For example, in the second row, columns (2) and (5), respectively, after prorating using a 35-year base period, for all foreign-born men the ratio of benefits to taxes falls to 0.83, while for foreign-born women it falls to 1.0.

Because a 35-year base period may be too short—in that it leaves some U.S.-born taxpayers paying taxes for a few years while benefits do not accrue and, therefore, foreign-born men still have a higher benefit-tax ratio than U.S-born men—it is of interest to consider the effects when the base period over which benefits are prorated is taken to be 40, rather than 35, years. That is, in equation (5), the primary insurance amount is multiplied by the number of years spent in the United States divided by 40. As seen in table 8.13, prorating over 40 years reduces benefits for foreign-born men by 13.6 percent, and by 15.1 percent for foreign-born women. As seen in

table 8.9, in this case, foreign-born men would pay 76 percent ($96,253/ $127,395) of the taxes paid by U.S. born and would receive 72 percent ($73,725/$102,340) of the benefits. For women, the comparable percentages are 78 percent ($37,140/$47,917) of taxes and 68 percent ($34,004/ $50,315) of benefits. Using a 40-year base period to prorate benefits, a man arriving in the United States in the 1970s pays 55 percent ($69,985/ $127,395) of the taxes paid by a U.S.-born resident, while receiving 48 percent ($49,440/$102,340) of the benefits. A man arriving in the United States in the 1980s pays 19 percent ($23,847/$127,395) of the taxes paid by a U.S.-born resident, while receiving 21 percent ($21,369/$102,340) of the benefits.

These numbers suggest that a 40-year base period for prorating benefits of foreign born may be a bit too long, at least for the HRS cohorts. As seen in columns (3) and (6) of table 8.10, the ratio of benefits to taxes paid for all foreign-born men and women falls below the ratio for U.S.-born men and women when benefits are prorated over a 40-year period. Consistent with the earlier finding from table 8.5, on average, a U.S.-born man will not accumulate a full 40 years of covered quarters.[27] Of course, one may also argue that since many U.S. born will pay payroll taxes for 40 years or more, 40 years is still an appropriate base period for prorating.

8.6   Income and Wealth for Immigrants and Native Born

If the immigrant population were uniformly poor, then one might be less concerned about an additional transfer created by the Social Security system to some members of that population. Although the immigrant population is heterogeneous, on average it is similar to the population of U.S. born. Moreover, as we have already shown, the transfers under the Social Security benefit formula accrue disproportionately to immigrants with higher rather than lower incomes.

To better understand the heterogeneity of wealth and income in the immigrant population, and how the immigrant population compares to U.S. born, we present data from the Health and Retirement Study. Table 8.14 indicates the distribution of income and total net wealth for U.S. born and for foreign born. Total net wealth also includes Social Security, pension wealth calculated from the detailed pension plan description obtained from employers, retiree health insurance, housing wealth, business assets, financial assets, and retirement assets (IRAs and Keoghs). Pension and Social Security wealth are based on work to date. The Social Security

27. U.S.-born male respondents with earnings histories have an average of 122 quarters of coverage, or 30.5 years. This means that they will average 38 years of coverage by the time they retire. For the HRS sample, the extra 3 years that U.S. born were paying taxes occurred at the beginning of their career, when real covered earnings were low and when the tax rates were half of what they are today.

Table 8.14   **Household Total Income and Total Net Wealth by Place in the Respective Distribution**

Income or Wealth Percentile	Income Distribution ($thousands)			Total Net Wealth Distribution ($thousands)		
	All	All U.S. Born	Any Foreign Born	All	All U.S. Born	Any Foreign Born
0–5	495	617	85	2,820	6,004	−1,142
5–10	4,244	4,672	1,883	43,706	49,614	11,722
10–25	12,041	12,682	8,240	104,993	112,848	56,751
25–50	26,287	26,657	22,963	240,942	248,638	179,268
50–75	47,182	47,557	44,536	452,362	457,091	409,118
75–90	72,628	72,265	75,540	758,026	758,839	752,288
90–95	101,522	100,260	110,275	1,151,061	1,146,787	1,179,163
95–100	197,330	190,352	248,258	2,495,418	2,491,024	2,536,617
45–55	35,828	36,202	33,131	331,460	337,861	275,265
Mean	46,249	46,082	47,500	487,450	491,864	454,391

Source: Authors' calculations using Health and Retirement Study, wave 1.

Note: All data are weighted by HRS sample weights. Base year is 1992 for wealth and 1991 for income.

value is computed from the work history through 1992; the pension value is calculated as of the date of expected retirement and then prorated to 1992. Household income measures similarly include pension and Social Security accrual and the value of health insurance, in addition to labor earnings, income from assets, government transfer income, and so forth.[28]

From table 8.14, it can be seen that the mean total wealth of immigrants is 92 percent ($454,391/$491,864) of the mean total wealth of U.S. born. Not shown in the table, the Social Security wealth of immigrants is 86 percent ($98,115/$114,212) of the Social Security wealth of U.S. born. Social Security wealth accounts for 23 and 22 percent of the wealth of U.S. born and immigrants, respectively.

Incomes of immigrants are even closer to those of U.S. born. Indeed, at the mean, immigrants have higher incomes than U.S. born in the HRS, exceeding the incomes of U.S. born by 3 percent ($47,500/$46,082). At the medians of the relevant distributions, incomes of foreign born are 92 percent ($33,131/$36,202) of the incomes of U.S. born.

The heterogeneity of the income and wealth distributions is readily apparent in these data. The top quarter of foreign born have higher incomes than the top quarter of U.S. born, and there is an even larger difference for the top 5 percent of each distribution. The top quarters of the wealth distributions for foreign born and U.S. born are very similar, as are the figures for the top 5 percent of each distribution. However, among the bottom quarter of the wealth and income distributions, foreign born are substantially poorer than U.S. born.

8.7 Participation in Transfers by Immigrants and U.S. Born

The Social Security system will save more than taxpayers will from prorating benefits paid to immigrants on the basis of time spent in the United States. Many immigrant families are eligible for Supplemental Security Income (SSI) and for other income-tested programs such as food stamps and Medicaid. To the extent that benefits from Social Security are reduced for foreign born, benefits from SSI and other taxpayer-supported means-tested programs will be increased.[29]

Information on current participation in transfer programs is presented in table 8.15. With the exception of food stamps, foreign born in the HRS are making less rather than more use of transfer programs than U.S. born. U.S.-born men are 4.6 percent more likely than foreign-born men to report

28. For further details on the construction of the wealth and income variables, see Gustman et al. (forthcoming).
29. Because 40 quarters of covered work are required to be eligible for Social Security, despite laws restricting eligibility to SSI by some immigrants, reductions in Social Security benefits will result in increases in SSI and other benefits for those whose earnings fall below break-even levels and who qualify in other ways for these transfer programs.

Table 8.15   **Transfer Statistics**

	All		U.S. Born		Foreign Born	
	Men	Women	Men	Women	Men	Women
	Percentages					
Permanent health problems	19.6	20.0	20.1	20.0	14.7	19.9
DI or SSI disability	6.9	4.8	7.2	4.9	3.5	4.0
Other disability	0.3	0.1	0.3	0.1	0.3	0.3
Medicaid	2.2	4.0	2.1	4.0	2.9	4.6
UI income	6.3	3.7	6.3	3.5	6.2	5.6
SSI income	2.4	2.8	2.4	2.7	2.6	3.4
Welfare income	0.8	1.9	0.7	1.9	1.5	2.7
Disability income	4.8	3.1	5.1	3.1	2.0	3.7
Food stamps	3.7	6.1	3.4	6.0	6.7	7.5
Potential SSI	14.8	20.1	13.5	19.2	29.9	29.1
Observations	3,251	3,699	2,970	3,364	281	335
	Average Amount Received among Recipients ($)					
UI income	2,725	2,120	2,735	2,090	2,607	2,313
SSI income	1,879	1,216	2,012	1,048	517	2,662
Welfare income	1,644	2,535	1,758	2,465	992	3,053
Disability income	7,921	5,051	8,026	5,208	4,851	3,687
Food stamps	1,032	1,296	985	1,286	1,307	1,380

Source: Health and Retirement Study, wave 1.

a health problem, and they are 3.5 percent more likely to be participating in a disability program.

In table 8.15, we report the potential population of recipients of SSI. One criterion we use to establish potential eligibility is that the individual will receive Social Security benefits below $422 per month ($633 for couples) times 1.468 to reflect the size of state supplements. Additionally, the household has to have less than $10,000 in financial assets (business, financial, IRA, and pension assets), increased to $15,000 for couples.[30] This represents five times the asset limits of $2,000 for singles and $3,000 for couples. Using these criteria, we see from table 8.15 under the heading *Potential SSI* that 14 percent of U.S.-born men will qualify for benefits, as will 19 percent of U.S.-born women. In contrast, 30 percent of foreign-born men and 29 percent of foreign-born women will qualify for SSI benefits.

30. In January 1996, the basic benefit for SSI was $470 per month for an individual and $705 for a couple. Beyond a small disregard, Social Security benefits and other sources of income are subtracted from the SSI benefit. Earnings beyond the disregard are taxed at 50 percent. The average amount of the federal SSI benefit is $250 per month, while the state supplement averages $117 per month. We cannot be too precise about the relation of these rules to the immigrant population due to restrictions on the data in the HRS. Specifically, as of the date of writing this paper, researchers who are using the Social Security records in the HRS will not be provided with detailed information on state of residence.

SSI also has the effect of reducing the work incentives for those who are in the lowest income brackets. It especially reduces work incentives for those eligible for SSI among the foreign born who have been here for the fewest years—that is, the same individuals for whom Social Security creates the greatest increase in work incentives. Of course, those within hailing distance of 40 quarters of coverage have a greatly enhanced incentive to postpone retirement because of the spike in the present value of Social Security benefits, to establish Medicare eligibility, and because eligibility for income-tested programs requires at least 40 quarters of covered employment.[31]

8.8   Money's Worth Calculations

The comparisons of present values of Social Security benefits and taxes presented in this paper indicate that for the members of the HRS cohort, Social Security is not a good deal. That result is consistent with some money's worth calculations made by Leimer (1994, app. E), but it is not consistent with money's worth calculations that use the same low, constant interest rate to inflate tax payments and discount benefits. A major reason for the difference is that we are inflating the nominal value of taxes paid to the Social Security system by the rate of interest already realized for tax payments made before 1992 (Council of Economic Advisers 1995, table B-72), and we are using the intermediate assumptions for interest rates from the Social Security Administration (Federal Old Age Survivors Insurance and Disability Insurance Trust Fund 1995, table II.D1) for tax and benefit payments made after 1992. This interest rate starts at 7.1 percent (4.2 percent real) in 1992 and falls to a steady state real rate of 2.3 percent in 2009. For the HRS cohort, the very high real interest rates realized throughout the 1980s far exceed the long-term real interest rate at which future benefits are discounted under the Social Security Administration's intermediate scenario.

Table 8.16 indicates the present values of benefits and taxes, and resulting benefit tax ratios for all U.S.- and foreign-born households. Adopting the assumption used so far in this paper, row 1 indicates the present value of benefits, discounted to 1992, using the Social Security Administration (SSA) intermediate assumptions to project future interest rates. In row 2, tax payments made by respondents are inflated to 1992 values by the interest rate on 10-year government bonds. The resulting present values of benefits fall below the present values of tax payments for both U.S. and foreign born. Benefit tax ratios are reported in row 3. They indicate

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31. Medicare is not valid outside the United States, so it will not enhance work incentives for those approaching age 65 with fewer than 10 years of covered quarters but who intend to return to their country of origin.

Table 8.16   **Money's Worth Calculations**

	All	U.S. Born	Foreign Born
Benefits discounted with SSA interest rate projection			
1. PV benefits ($)	120,279	122,397	100,182
Taxes inflated by 10-year government bond rate			
2. PV taxes ($)	133,739	136,836	104,348
3. PV benefits/PV taxes	0.899	0.894	0.960
Taxes inflated by return on Social Security portfolio			
4. PV taxes ($)	127,265	130,022	101,103
5. PV benefits/PV taxes	0.945	0.941	0.991
Benefits and taxes calculated with 2.3 percent real interest			
6. PV benefits ($)	141,675	144,148	118,213
7. PV taxes ($)	117,692	120,390	92,091
8. PV benefits/PV taxes	1.204	1.197	1.284

Note: PV = present value. All values are calculated assuming work until expected retired date, discounted to 1992.

that the present value of benefits falls below the value of tax payments by about 10 percent for U.S. born, and that benefits fall below taxes by about 4 percent for foreign born.

Row 4 of table 8.16 reports the value of taxes when their value is inflated by the return on the Social Security portfolio.[32] The ratio of benefits in row 1 to this measure of taxes suggests that Social Security benefits paid to members of the HRS cohort who were born in the United States fall below the value of taxes paid by about 6 percent. For foreign born, benefits fall below taxes by about 1 percent.

An alternative approach implicit in some calculations made in discussing the money's worth of Social Security would use the same real interest rate to blow up taxes and discount benefits. As seen in rows 6–8 of table 8.16, when we use a constant 2.3 percent real interest rate to deflate benefits and to inflate tax payments, the present value of benefits exceeds the value of tax payments by 20 percent for U.S. born, and by 28 percent for foreign born.

8.9 Would U.S. Born Prefer That Immigrants Participate in Social Security?

To this point, we have focused on differences in the relative treatment of immigrants and U.S. born by the Social Security system. The data on the present values of benefits and tax contributions can be used to answer a different question. If we were to evaluate the participation of immigrants in Social Security from the purely selfish perspective of U.S. born, would

32. The average return in each year to Social Security investments is taken from the home page of the Office of the Chief Actuary (http://www.ss.gov/OACT/).

the U.S. born prefer that immigrants participate in the Social Security system? [33]

One part of the answer to this question turns on the money's worth calculation as applied to immigrants. An additional part of the answer turns on the amount that immigrants who leave the country without collecting benefits, but having paid taxes, contribute to the Social Security system. That is, although the amount paid by immigrants who leave the country without collecting benefits is not relevant to determining whether the current system favors *immigrants who stay* relative to U.S. born, it is relevant to calculating whether the total contributions from all immigrants exceed or fall short of total taxes paid by all immigrants.

We have found that immigrants in the HRS cohort receive a better deal than U.S. born in that cohort. However, we have also found that the deal immigrants receive is poor enough that immigrants in the HRS cohort pay more in taxes than they receive in benefits.[34] Once we add in the contributions made by immigrants who returned to their country of origin without becoming eligible for Social Security benefits, the tax contributions are much greater than benefits received, and should lead native born to favor including immigrants in the Social Security system.

Duleep (1994) reports that calculations by the SSA assume that the emigration rate is 30 percent, implying that roughly half the number of current resident immigrants returned to their country of origin. Her own calculations are consistent with the SSA assumptions.[35] According to the National Research Council (1997, 7-6), about 30 percent of immigrants return to their country of origin, most within a decade of arriving in the United States. Our own very rough calculation is consistent with an emigration rate of 30 percent.[36]

33. When we answer the question of whether U.S. born would prefer that foreign born participate in Social Security, it is not on the basis of the flow of funds. Rather, we focus on the present value of the immigrants' contributions and benefits.

34. In table 8.16, tax payments made by immigrants exceed the value of benefits as long as, counter to the experience of the HRS cohort, we do not assume a low, constant interest rate.

35. However, with the change in country of origin from Europe for recent immigrants, Duleep (1994) is skeptical that the 30 percent emigration rate will continue.

36. We begin by summing the number of legal immigrants to the United States from 1931 to July 1992 who were born from 1931 to 1941. That figure is 2.983 million. We then turn to estimating the current population of immigrants who were born between 1931 and 1941. According to the 1990 Census of Population and Housing, there were 2.389 million immigrants who were age 49–59 in 1990. Next, we adjust the number of resident immigrants born from 1931 to 1941 for illegal immigration. Dividing INS estimates of the number of illegal immigrants in the United States by the CPS immigrant population, we find a rate of about 17 percent. Data from Warren (1997) and Passel, Bean, and Edmonton (1990) suggest that about 15 percent of foreign-born residents are illegal immigrants. Data from the National Research Council (1997) suggests a rate of about 16 percent. Adjusting the number of foreign born downward by 15 percent to isolate the number of legal foreign-born residents in the United States leaves 2.031 million. Dividing the number who remain by the number ever immigrating, we have .68, or an emigration rate of just over 30 percent.

Based on the information from the HRS and the evidence provided by Duleep, it is possible to guess at the tax contributions made by immigrants who will not collect benefits. Duleep finds that five-sixths of emigrants are not qualified for Social Security, probably having worked for fewer than five years. Accordingly, the 30 percent (or less) of immigrants who emigrate are likely to have contributed much less to Social Security taxes than their numbers would suggest.

Duleep also finds that most immigrants who leave before 10 years appear to emigrate within the first five years of U.S. residence (1994, 31). Since immigrants who remain in the United States have over 80 quarters of coverage, then if returnees had as many as five years of coverage, or about 20 quarters of coverage, their quarters of coverage would amount to about one-fourth of the quarters accrued by those immigrants who remain. Assume that those who return within a decade have half of the earnings of those who stay.[37] Then the taxes paid by emigrants who receive no benefits will amount to about 5 percent of the taxes paid by immigrants who remained in the United States [(.5) $\times$ (5/6) $\times$ (.25) $\times$ (.5)]. Adopting these assumptions, in determining whether U.S. born would prefer to have foreign born participate in the Social Security system, the tax contributions of foreign born should be increased by about 5 percent.

The addition of 5 percent to taxes collected from emigrants would reduce the benefit-cost ratio of foreign born from 0.960 ($100,182/$104,348) to 0.914 [$100,182/($104,348 $\times$ 1.05)]. Thus, from an ex ante perspective, asking what the value of participating in Social Security is to a new immigrant who does not yet know if he will return to his country of origin, the benefit-cost ratio of participating in Social Security is 91.4 percent. Both benefit-cost ratios for immigrants exceed the benefit-cost ratio for U.S. born of 0.894 ($122,397/$136,836).[38]

8.10 Conclusions

It is useful to estimate, if only roughly, the overall reduction in Social Security payments from prorating benefits of immigrants over a 35- or 40-year period. According to the Social Security Administration's Annual Statistical Supplement (1996, 196), there are 10.1 million insured men and 8.5 million insured women who were age 55–64 in 1996 (51–60 in 1992),

37. Duleep (1994, 20) cites statistics suggesting that four-fifths of those who emigrate within the first 10 years do so within the first 5 years. This means that the assumption of 20 quarters of work by emigrants may be too high. We assume that earnings of emigrants are half the rate of the earnings of those who stay in view of the short period of time for them to find a good job match and experience earnings growth.

38. Again, from the perspective of providing comparable returns to U.S.-born and foreign-born Social Security beneficiaries, there is no reason for the tax payments made by immigrants who leave the United States to be credited toward the accounts of immigrants who stay.

representing roughly 10/11 of the HRS cohort.[39] Approximately 9 percent of these are foreign born, amounting to 0.91 million foreign-born men and 0.77 million foreign-born women. Comparing tables 8.7 and 8.11, when prorating using a 35-year period, benefits from own earnings are reduced by $5,781 ($85,356 − $79,575) for foreign-born men, and by $2,937 ($40,045 − $37,108) for foreign-born women. Multiplying by the number of insured foreign-born men and women yields a total difference in benefits of $7.5 billion for the 91 percent of the HRS cohort who were born from 1932 to 1941.[40] When prorating using a 40-year period, benefits from own earnings are reduced by $11,631 ($85,356 − $73,725) for foreign-born men, and by $6,041 ($40,045 − $34,004) for foreign-born women. Multiplying by the number of insured foreign-born men and women yields a total difference in benefits of $15 billion for the 91 percent of the HRS cohort born from 1932 to 1941.[41]

Turning from the HRS population to the full population, the cohort born from 1932 to 1941 represents one-seventh of those who are now age 25–64.[42] Thus, although the earnings histories and populations are quite different, if the HRS population provides any basis for projecting to the full working-age population, the saving from prorating Social Security benefits of immigrants may amount to a present value of $50-$100 billion.

8.10.1   Are There Reasons for Providing Higher Returns under Social Security for Foreign Born?

There are a number of possible arguments to be made in favor of providing a higher return under Social Security for foreign born than for U.S. born. One might cite need as a basis for providing a higher return to immigrants. But we show that mean annual earnings of immigrants are similar to the earnings of U.S. born. Nevertheless, it may be argued that most immigrants will not receive retirement benefits from work in their countries of origin. A central problem with this rationale, however, is that the current system disproportionately benefits high-wage immigrants who have been in the United States for only a decade or two. If one wishes to redistribute toward poor immigrants, it is much more efficient to do so using other income-tested policies, such as Supplemental Security Income

39. The figures for covered population cited in the *Annual Statistical Supplement* (Social Security Administration 1996) pertain to those age 51–60 in 1992, while the HRS pertains to those 51–61 in 1992. Roughly speaking, the number of covered workers cited in the *Annual Statistical Supplement* therefore represents 91 percent (10/11) of the HRS cohort.

40. Therefore, multiplying $7.5 billion by (11/10) and prorating over 35 years would reduce benefits for the full HRS cohort by approximately $8.25 billion.

41. Multiplying $15 billion by (11/10), the projected saving for the full HRS cohort is $16.5 billion.

42. Earnings are lower for cohorts who arrived in the United States after the HRS cohort, reducing the effects of prorating on their benefits. On the other hand, younger cohorts experienced a higher ceiling on covered earnings throughout their work lives.

(SSI). Such programs are bound to be more target efficient than is a scheme that automatically counts any year spent outside the United States as a year of zero earnings, and then redistributes benefits based on that calculation using the Social Security formula.[43]

Another possible argument for redistributing in favor of immigrants is that some immigrants, those who only spend a few years in the United States, pay Social Security payroll taxes but receive no benefits. The obvious question is, Why should *only* those immigrants who stay receive the credit for taxes paid by other individuals, those immigrants who emigrate before becoming eligible for benefits? Shouldn't we credit tax payments made by immigrants who will not collect benefits due to emigration not only to immigrants who stay but also to U.S. born? Although relevant to an ex ante calculation of the value of Social Security to an immigrant who has yet to enter the United States, it is not any more justified to credit the loss of tax payments by those who emigrate only to immigrants who stay in the United States than it is to credit the tax payments made by U.S. born who do not qualify for benefits only to U.S. born who do.[44]

A related argument might cite the long vesting period under Social Security as a reason for treating immigrants who qualify for benefits more favorably than U.S. born.[45] Mitigating this argument, the 10-year vesting under Social Security is more flexible than vesting under private pensions. Social Security counts work with any employer as part of the vesting period and uses a very low threshold of earnings to establish a quarter of work, while pensions usually require full-time work for a single employer.[46] For clarity and equity, issues of vesting and of benefit determination should be treated separately.

43. Under the welfare reform adopted in 1996 (Personal Responsibility and Work Opportunity Reconciliation Act of 1996), Congress denied SSI benefits to many noncitizen immigrants. These provisions are not central to this discussion because the restriction does not apply to immigrants who have worked 10 years or more in the United States, which is the same as the requirement for eligibility for Social Security benefits.

44. Another possible argument for maintaining the favorable treatment of immigrants would cite the windfall benefits from Social Security that accrued to the parents of U.S. born but not to the parents of foreign born. For balance, this argument, if extended, would require that we somehow divide the capital formed from expenditures undertaken throughout U.S. history and determine which part should be billed to immigrants. Moreover, in contrast to the spirit of this argument, the redistribution under the current formula is toward those immigrants who are in the United States for fewer years, and thus toward those who pay fewer taxes, rather than toward immigrants who are paying taxes for most of their work life.

45. The 40-quarter vesting period required for immigrants to vest in Social Security is longer than the maximum vesting period under U.S. pension law. Although initially a 10-year vesting was required under ERISA for private pension plans, the Tax Reform Act of 1986 shortened the vesting period to 5 years (5-year cliff vesting or 7-year graded vesting).

46. Social Security treats those who have worked for short periods early in their lifetimes much more favorably than they are treated under defined-benefit pension plans offered in the private sector. This favorable treatment results not only from the progressivity of the Social Security benefit formula but also because Social Security benefits are computed from indexed, rather than nominal, yearly earnings.

Thus, it is difficult to justify the kind of redistribution fostered by the current Social Security system.

8.10.2 Implications

The Social Security system treats years of residence outside the United States as years of zero earnings. The resulting redistribution is not target efficient. It increases benefits not only for those with low lifetime earnings who are meant to gain from redistribution under the progressive Social Security benefit formula, but also for many immigrants who have similar wealth and incomes as U.S. born, especially those with high incomes who have only been here for a decade or two by the time they retire. Statistics on income and wealth demonstrate that as a group, immigrants are not much worse off than native born and, indeed, that the rich among the immigrants are as wealthy and have higher incomes than the rich among U.S. born. It is very hard to justify the disproportionately high Social Security benefits for immigrants who have relatively high earnings and who have been in the United States for shorter periods of residence. Yet this is the consequence of the mechanical application of a uniform Social Security formula that fails to distinguish years of zero earnings from time spent outside the United States.

A system of prorating Social Security benefits for immigrants on the basis of the fraction of a 35- to 40-year base period spent in residence in the United States would eliminate the very high returns enjoyed under Social Security by some immigrants. Aid under SSI will mitigate the effects of the benefit reduction on the poorest of the immigrants. Prorating the benefits of immigrants based on the share of the base period spent in residence could be accomplished by modifying the approach now taken under totalization agreements already adopted under Social Security.

All of this said, the Social Security system has benefited financially from having immigrants in the HRS cohort participate. Despite the better deal they receive, like U.S.-born participants in the HRS cohort, most immigrants in the HRS cohort who remain in the United States will pay more in taxes than they will receive in benefits, although just barely. From the perspective of U.S.-born participants, taxes received from immigrants who subsequently emigrate without collecting benefits tip the balance in favor of having included immigrants from the HRS cohort in the Social Security system.

Appendix

Table 8A.1   **Distribution of Immigrants by Decade of Immigration and Average Real Covered Earnings in Years Worked**

Year Immigrated	Real Covered Earnings in Year Worked					Sum of Columns
	<$5,000	$5,000–$10,000	$10,000–$20,000	$20,000–$30,000	> $30,000	
Men						
Before 1940	0	0	1	0	2	3
1940–49	0	0	4	6	6	16
1950–59	3	5	23	37	25	93
1960–69	3	7	38	33	53	134
1970–79	9	12	33	25	25	104
1980 or later	10	17	24	9	6	66
Sum of rows	25	41	123	110	117	416
Women						
Before 1940	1	0	3	3	0	7
1940–49	5	11	5	1	3	25
1950–59	17	35	39	20	5	116
1960–69	26	36	54	28	14	158
1970–79	22	22	35	8	6	93
1980 or later	11	12	24	3	1	51
Sum of rows	82	116	160	63	29	450

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