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OF IMMIGRANTS AND U.S. BORN

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Working Paper **6478**

NBER WORKING PAPER SERIES

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Working Paper 6478
<http://www.nber.org/papers/w6478>

NATIONAL BUREAU OF ECONOMIC RESEARCH
1050 Massachusetts Avenue
Cambridge, MA 02138
March 1998

Gustman and Steinmeier received support from the National Institute on Aging through a grant to the National Bureau of Economic Research. In addition, support for Gustman was provided by a Rockefeller Center Fellowship at Dartmouth College. We would like to thank Richard Freeman, Dean Leimer, Lawrence Thompson and participants in the NBER Conference On Immigration for their helpful comments, and Emily Loudon for her research assistance. Any opinions expressed are those of the authors and not those of the National Bureau of Economic Research.

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NBER Working Paper No. 6478
March 1998
JEL Nos. J14, J26, H55, F22

ABSTRACT

For each year of work under the Social Security System, immigrants realize a higher benefit than U.S. born, even when their earnings are identical in all years the immigrant has been in the U.S.. Two features of the social security benefit calculation are responsible for the relatively favorable treatment of immigrants: the social security benefit formula transfers benefits toward those with low lifetime covered earnings, and all years an immigrant spends outside the U.S. are treated as years of zero earnings. Immigrants with high earnings who have worked in the U.S. for only a decade or two benefit most from these procedures.

If instead earnings were averaged only over the years an immigrant resides in the U.S., and benefits were prorated based on the share of a 35 or 40 year base period spent in residence, immigrants would receive the same return on their social security taxes as U.S. born who have the same earnings in each year. For a sample from the Health and Retirement Study, a group born from 1931 to 1941, prorating reduces the social security benefits of immigrants by 7 to 15 percent. For immigrants who entered in the 1980's, the comparable reductions in benefits would be over 30 percent.

It is difficult to justify the current procedures determining social security benefits for immigrants on the basis of income or wealth differences between U.S. and foreign born. Among HRS respondents, mean total wealth of immigrants is 92 percent of the mean total wealth of U.S. born, while the mean income of immigrants exceeds the mean income of U.S. born by 3 percent. But income and wealth are less evenly distributed among foreign born than U.S. born. The top quarter among foreign born have higher incomes than U.S. born and similar wealth, while the bottom quarters of foreign born have lower wealth and income than U.S. born.

Depending on whether the appropriate period for calculating benefits is taken to be 35 or 40 years, prorating would reduce the present value of benefit payments to the cohort of immigrants born from 1932 to 1941 (91 percent of the HRS cohort) by \$7.5 billion or \$15 billion respectively. The 1932 to 1941 cohort represents one seventh of all foreign born who are now 25 to 64.

One can also ask whether, from a purely selfish financial viewpoint, U.S. born participants would have preferred to have immigrants from the HRS cohort included in social security. The answer is yes. Despite the better deal they receive, like U.S. born participants in the HRS cohort, most immigrants in the HRS cohort will pay more in taxes than they will receive in benefits, although just barely. Taxes received from immigrants who subsequently emigrate without collecting benefits tip the balance in favor of including immigrants from the HRS cohort.

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I. 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 U.S., but that the transfers are not due to or justified by low earnings of immigrants. Immigrants who have been in the U.S. 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 U.S. is discussed. Prorating will provide similar rates of return under social security to U.S. and foreign born with similar earnings in each year of work. We also find that although foreign born have a higher return to their social security taxes, U.S. born would prefer that immigrants are included in social security. The reason is that the cohort now approaching retirement will have paid more in social security taxes than will received in benefits. Consequently, even though immigrants receive a better deal under social security than U.S. born, the immigrants just reaching retirement age have contributed more to social security than they have received 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 among the highest 35 years of real covered earnings. Low lifetime earnings may be the result of a low earnings level in each year

of work, or may be the result of few years of covered employment.¹ When average covered earnings is computed for immigrants who have spent fewer than 35 years in the U.S., the average includes zeros for years spent outside the U.S.. Accordingly, immigrants who have been in the U.S. for only a part of their worklives are treated by the Social Security System as having lower average earnings than the average of the yearly earnings they in fact report.² 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.

A. 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 than for U.S. born. One might cite need as a basis for providing a higher return to immigrants. To be sure, we will 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 U.S. for only a decade or two. It is much more efficient to redistribute toward poor immigrants using other income tested policies, such as Supplemental Security Income (SSI). Such programs are bound to be more target efficient than is a scheme that

¹It would be interesting to compare the redistribution of benefits under the current approach that results from low wage rates with the redistribution that results from sporadic work patterns.

²In contrast, average earnings calculated over the period of covered employment are used for the purpose of determining benefits under the disability program.

automatically counts any year spent outside the U.S. as a year of zero earnings, and then redistributes benefits based on that calculation using the social security formula.³

Another possible argument for redistributing in favor of immigrants is that some immigrants, those who only spend a few years in the U.S., pay social security payroll taxes but receive no benefits.⁴ The obvious question to ask 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?⁵ Although relevant to an *ex ante* calculation of the value of social security to an immigrant who has yet to enter the U.S., it is not any more justified to credit the loss of tax payments by those who emigrate only to immigrants who stay in the U.S. than it is to credit the tax payments made by

³Under the welfare reform adopted in 1996 (The Personal Responsibility and Work Opportunity Reconciliation Act of 1996), Congress has 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 ten years or more in the U.S., which is the same as the requirement for eligibility for social security benefits.

⁴Generally, noncitizen immigrants who work for fewer than forty quarters under social security pay taxes, but receive no benefits. There also are complex provisions that prohibit the payment of benefits to certain noncitizens who are qualified for benefits, but who reside outside the U.S. for more than six months. Payment will not be made if the individual resides in a list of countries that do not pay benefits to their citizens living in the U.S., resides in countries that do not have a social security system, or is excluded for other reasons. Benefits for spouses and survivors may also be withheld if they live overseas and did not live in the U.S. for at least five years. (Commerce Clearing House, *Social Security Explained*, 1996, pp. 285 - 287; *Social Security Bulletin, Annual Statistical Supplement*, 1996, p. 397).

⁵We will again discuss the tax payments made by immigrants who return to their country of origin, but in the context of the question: when comparing taxes paid by immigrants with benefits received, would U.S. born prefer immigrants to be included in the Social Security System?

U.S. born who do not qualify for benefits only to U.S. born who do.⁶

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.⁷ Mitigating this argument, the ten 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. For clarity and equity, issues of vesting and of benefit determination should be treated separately.⁸

⁶Another 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 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 towards those immigrants who are in the U.S. for fewer years, and thus towards those who pay fewer taxes, rather than towards immigrants who are paying taxes for most of their work life.

⁷The forty 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 ten year vesting was required under ERISA for private pension plans, the Tax Reform Act of 1986 shortened the vesting period to five years (five year cliff vesting or seven year graded vesting).

⁸If we take the Social Security System to be a defined benefit system, then aside from vesting provisions, there are differences between social security and pensions is suggested by the difference in the calculation of covered earnings history. 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, which will be discussed extensively, but also because social security benefits are computed from indexed rather than nominal yearly earnings. Defined benefit pension systems in the private sector base benefits on nominal earnings, not indexed earnings. As a result, those with short periods of covered work that end well before retirement age receive disproportionately low benefits from private DB pensions. (For further discussion of backloading of defined benefit plans and its implications, see Gustman and Steinmeier, 1995). On the other hand, benefits under social security are based on average indexed lifetime earnings, while benefits under private defined benefit pensions are

Thus it is difficult to justify the kind of redistribution that we find is fostered the current social security system.

B. Objectives Of This Paper.

To further inform policy makers about the operation of the current system, this paper first explores the effects of applying the current social security benefit formula to immigrants and U.S. born with similar yearly earnings. Social security benefits are computed for U.S. born at representative ages and levels of real yearly earnings, and are compared with benefits paid to immigrants of comparable ages and with comparable real yearly earnings, according to the time the immigrant has spent in covered work in the U.S..

A second objective is to explore the implications of an alternative policy to the current system, in which the social security benefits of immigrants would be prorated based on the fraction of the immigrant's worklife actually spent in residence in the U.S..⁹ By prorating the benefits in accordance with the fraction of worklife the immigrant has spent in the U.S., it is

usually based on the last few years of high earnings. Thus other things the same, those with short periods of earnings that occur later in their lifetime, or with sharply rising earnings, are more heavily rewarded under a private sector defined benefit pension plan relative to a program like social security where the benefit is based on average lifetime earnings.

⁹This alternative approach is not entirely new. A variant of the approach we will examine is already used to compute benefits for immigrants whose eligibility for social security is based on "totalization agreements"; but this approach is not widely applied to compute the benefits of immigrants. Under totalization agreements, benefits are prorated for immigrants on the basis of the fraction of 35 years that have been spent in covered social security employment. The central purpose of totalization agreements is to allow workers who are partially covered by U.S. social security while working abroad to qualify for benefits, even though they have accumulated less than the required forty 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. Seventeen countries have totalization agreements, which are bilateral agreements with the U.S..

possible to avoid redistribution to high wage immigrants and other consequences of averaging earnings over a 35 year period for immigrants, no matter when they entered the country .¹⁰ Such a system would lower benefits for all immigrants, but would still provide progressively higher benefits for low wage than for high wage immigrants.¹¹ Calculating benefits under a prorated

¹⁰The variant of totalization agreements we consider would prorate benefits based on the fraction of time *residing* in the U.S., rather than the fraction of time *worked* in the U.S.. Totalization agreements do not cover many foreign born. 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. (Source: *Social Security Bulletin, Annual Statistical Supplement*, 1996, p. 269.) Overall, there are 2.76 million foreign born in the U.S. over the age of 65. Of these, 1.7 million are naturalized citizens and 1.05 million are not. (Source: Current Population Reports, P-20-494, March 1997, by Kristin A. Hansen and Carol S. Farber, p. 3.)

¹¹Other groups who are outside the Social Security System for part of their worklives have their benefits calculated using special formulas which 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 such windfall elimination provisions, some adjustments may also be made to the social security benefits received by immigrants to the U.S. who report 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 twenty years in the U.S., the replacement rate in the first bracket of the formula determining the social security benefit, that is, for the first \$455 per month, or \$5,460 of average yearly earnings, is lowered from 90 percent to 40 percent. This reduces the degree of redistribution under the formula. For those who worked between twenty and thirty 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 on the first \$5,460 of average indexed monthly earnings. 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 survivors 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, "A Pension From Work Not Covered By Social Security, 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 of 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. 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

system also provides a benchmark for judging how much redistribution the current system creates.

A third objective is to better understand the empirical distribution of social security benefits and taxes for foreign and U.S. born, using actual social security records for a representative sample of the population born from 1931 to 1941, a group that is now close to retirement. The extent of the actual redistribution between U.S. and foreign born depends on the earnings history of each group and on the number of years of covered work spent under social security. It also depends on the history of the social security regulations, including covered earnings and tax rates. We consider the lifetime patterns of participation in the U.S. Social Security System by U.S. born and foreign born residents or citizens, and investigate the extent of redistribution of benefits to foreign born under the U.S. Social Security System. Using data from the Health and Retirement Study (HRS), patterns of participation in the labor market and in social security are examined for immigrants, and are contrasted with results for native born.

A fourth objective is to better understand differences in labor force patterns, wealth accumulation and incomes between U.S. and foreign born. The means of income and wealth for immigrants are not that dissimilar from the comparable means for native born. Those in the top quarter of income recipients among immigrants have higher incomes than the top quarter of income recipients among U.S. born. Accumulated wealth is similar for the top quarter of wealth holders among immigrants and among U.S. born. These findings will argue against mechanically applying a heavily progressive social security benefit formula to redistribute benefits in favor of immigrants.

and are receiving pension or social security benefits from their country of origin.

A fifth aim of this study is to address the question; what is the appropriate length of a base period to use when prorating the benefits of immigrants to reflect the shorter time they spend working under the Social Security System? U.S. workers pay taxes every year they work, but their benefits are based only on 35 years of earnings. As we will see, although U.S. workers average fewer than 40 years of covered work, many work forty or more years, paying social security taxes in each year. There is a question whether these extra years of social security taxation experienced by some U.S. born participants should be considered when aligning benefits and costs of immigrants to benefits and costs of U.S. born. We will examine social security benefits for immigrants when benefits are reduced in a prorated system by the ratio of years of residence in the U.S. divided by 40 rather than 35.

A sixth objective is to understand the interactions of the social security system with the SSI system, and how those interactions differ between U.S. and foreign born.

A seventh objective is to broaden the perspective of the paper from the question of how immigrants are treated relative to U.S. born under social security, to the question of whether U.S. born participants in social security would prefer, from the selfish and narrow perspective of whether immigrants have contributed more in the way of social security taxes than they will receive in benefits, to have immigrants included in the system. We begin with money's worth calculations for U.S. and foreign born, and then compare the present value of taxes paid by immigrants in the Health and Retirement Study to the value of benefits they will receive. We also discuss implications for other cohorts.

The social security benefit formula is examined in Section II and its implications for redistribution of benefits among U.S. and foreign born are explored. Section III discusses the

effects of adopting an alternative benefit structure for immigrants, where benefits are prorated on the basis of time spent in the U.S.. Labor force patterns and earnings distributions, as reported by respondents to the Health and Retirement Study, are examined in Section IV. Section V 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 VI. Section VII considers participation in transfer programs by immigrants and native born. Section VIII compares benefits and contributions for U.S. and foreign born. Section IX asks whether, on a purely selfish basis, native born participants would favor having foreign born participate in the system. Section X concludes the paper.

II. How The Social Security Benefit Formula Differentially Affects U.S. and Foreign Born

A. 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 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 .¹²

The AIME is given in Equation 1.

$$\begin{aligned}
 \text{AIME} &= \frac{x_s w}{35} && \text{if } x_s < 35 \\
 (1) \quad &= \frac{35 w}{35} = w && \text{if } x_s \geq 35
 \end{aligned}$$

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% of the first \$455 of AIME, 32% of AIME above \$455 to \$2741, and 15% of AIME over \$2741. Forty quarters of coverage are required to be eligible for benefits.

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

B. Benefits and Taxes

If the number of years worked under social security is equal to x , the number of years since entering the U.S. 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

¹²This assumption is only approximate. The actual 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.

$$(3) \quad V = g(a_0 + x) PIA - \int_{a_0}^{a_0 + x} b w e^{-(r-g)(t-62)} dt$$

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 \$13.61.¹³ The individual would be eligible for 86.7% 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%, or \$11.80.¹⁴

In the second term, b is the social security contribution rate. The rate currently levied to support old age and survivors benefits is 10.6%.¹⁵ The expression $b w e^{-(r-g)(t-62)}$ represents the value of the contributions paid at age t , discounted to age 62.¹⁶

¹³This calculation uses a 2.3% real interest rate, consistent with the assumptions of the Social Security Trustees.

¹⁴In this analysis, and in the subsequent empirical analysis, we ignore the effects of the individual's private information, that is, known differences among individuals about their life expectancy that may make social security more attractive to individuals with a long life expectancy, and less attractive to those who expect to live for fewer years.

¹⁵More precisely, from the year 2000 and thereafter, the combined employer and employee rate will be 10.6%. The combined rate currently is 10.52%. See Social Security Administration (1996, Table 2.A3.).

¹⁶It is also possible to analyze how the change in the value of benefits minus payroll tax payments vary with the amount of time spent outside the U.S.. Formally, one can conduct such an analysis by differentiating V in Equation 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).

C. Differences In Returns To Social Security Between U.S. and Foreign Born Arising From Social Security's Progressive Benefit Structure

Most foreign born have their social security benefits computed with the same formula that is applied to U.S. born. As long as they have worked for forty quarters under the Social Security System, the benefit formula is applied only to whatever earnings they have accrued in covered work in the U.S.. The procedures adopted for calculating AIME, when used together with the progressive formula that is applied to calculate the primary insurance amount (PIA), creates higher replacement rates for foreign born than for U.S. born, especially for those who have spent only a few decades in the U.S..

1. Benefit Replacement Rates and Time In The U.S.

Table 1 provides an illustration of benefits when earning fall in different brackets of the social security formula. The illustration begins with a calculation, looking forward, for a person who is 21 today and will earn the 1997 maximum taxable wage of \$65,400 in real terms for his entire worklife. If the 1997 formula continued in place and the 21 year old spent his entire worklife under the U.S. Social Security System, the individual's real yearly retirement benefit at age 65 would be \$18,759.¹⁷ 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 benefit. The remaining 27 percent of

¹⁷Given 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 Martin Feldstein (1998).

the benefit comes from the fifty percent of covered earnings between \$32,892 and \$65,400.

In the case of an otherwise comparable immigrant who has been in the U.S. for less than the full 35 years, the social security benefit formula counts all years of work outside the U.S. 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 1, for a foreign born individual who will divide a full time work life between his country of origin and the U.S., 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 U.S. for ten years. Applying the current formula, the AIME includes as the highest 35 years of earnings, ten 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 1 indicates that an immigrant who worked ten years in the U.S. will have the 90 replacement rate extend through the first \$19,110 earned per year in the U.S.. That is, a person who earned \$19,110 in real terms in each year of his 10 years in the U.S. will receive yearly benefits worth 90 percent of the AIME. Analogously, for a person who has been in the U.S. for twenty years, average earnings for the first twenty years of up to \$9,555, will have a replacement rate of 90 percent. For a person in the U.S. 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 1 and are

pictured in Figure 1. Because only \$65,400 of income is counted in any year, that means that a person who has been in the U.S. for ten 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 U.S. 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 32 percent marginal rate. Even a person who has been in the U.S. 30 years has wider brackets than would face the U.S. citizen, and would thus enjoy a higher marginal replacement rate than the counterpart U.S. citizen.

Using data from the Health and Retirement Study, to be examined in much more detail below, Figure 2 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 will retire with about ten, twenty, or thirty years of coverage. Table 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 U.S. 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 1970's 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 U.S. 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.

2. Variation of Benefit Replacement Rates With Yearly Earnings And Time In The U.S.

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 U.S. and with the earnings for simple, standardized cases, it will be easier 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.¹⁸

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 twenty two 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 2 and the corresponding Figure 3 report benefits that would be received by decades of covered work in the U.S. at the indicated yearly earnings. One hallmark of the social security

¹⁸Members 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.

benefit structure is its progressivity. Comparing benefits for those earning the 1997 maximum covered earnings of \$65,400 with those earning \$5,000 a year over a forty year worklife, an income difference of 13 to 1 is associated with a comparable ratio of benefits of 4 to 1. It is also apparent from Figure 3 that 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 ten 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.¹⁹

Figure 4 pictures the share of the benefit due to each additional decade of social security coverage for those at different real earnings levels. As can be seen from the equal height of the bar segments on the left hand side of the figure, 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 worklife. Those with incomes low enough to remain in the first bracket through their entire worklives 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

¹⁹If 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. For further discussions, see Gustman and Steinmeier (1985 and 1991).

more, working in the U.S. for ten years will entitle them to about half 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 U.S. accounts for another twenty to thirty percent of benefits. The third quarter of work contributes around fifteen to twenty percent of the benefits received by a U.S. worker covered for forty years. The final ten years of work account for a lower share of benefits for all income classes. For all but those earning \$5,000 a year, the last quarter of covered employment, and of taxes paid, generates ten percent or less of the total benefits paid as a result of forty years of work. For those earning \$50,000 or above, each decade of work contributes successively less to benefits.

Figure 5 presents these results from a slightly different perspective, indicating the fraction of benefits paid to a U.S. worker, who works for forty years, that is received by a foreign worker by decades in the U.S.. Except for the very first bracket, for working under social security for half the time of a U.S. worker, a foreign worker earning \$10,000 a year or more receives seventy to eighty percent of the benefit paid to a U.S. worker. Only half the payroll taxes charged to a U.S. worker with comparable earnings over forty years have been paid by a foreign worker and his employer after twenty years of work, however.

Although the absolute value of the benefit is lower for a person who has been in the U.S. for fewer years, the rate of return on taxes paid is higher for an immigrant. One can compute benefit-cost ratios according to time spent working in the U.S.. Using the simplifying assumption that the rate of wage growth is equal to the interest rate, ratios of the benefit/cost ratios for foreign born over U.S. born working forty years are pictured in Figure 6, by average yearly earnings and years in the U.S.. For example, the benefit/cost ratio for those earning \$5,000 a year

is slightly higher for foreign than for a U.S. born worker with forty years of employment, whether the foreign born works for ten, twenty or thirty years. The ratio exceeds one because the U.S. born person is working in the fourth decade, but benefits are based only on the high 35 years of earnings. As a result, taxes paid during the final 5 years of work by a U.S. born person working 40 years have no effect on benefits, but they reduce the benefit/cost ratio.

The benefit cost ratio is about 15 percent higher for an immigrant making \$5,000 per year for ten years than it is for a U.S. born person who works 40 years. For those making \$20,000 to the maximum earnings, the benefit/cost ratio for foreign born who are in the U.S. for 10 years is about twice the benefit/cost ratio for U.S. born. Foreign born who work 20 years in the U.S. and have yearly earnings of \$10,000 or more have a benefit cost ratio that is 36 percent to 57 percent higher than the ratio for U.S. born with comparable yearly earnings.

Just as the replacement rates are higher for those who worked fewer years, the reward to continued work is higher for those who have been covered by social security for fewer years. When benefits are recomputed, each additional year of work replaces a year of zero earnings in the AIME computation.

III. Social Security Benefits When Benefits Are Prorated Based On Time In The U.S.

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

The formula for prorating analyzed here computes the Average Indexed Monthly Earnings

only over the time the immigrant has spent in the U.S., computes the associated Primary Insurance Amount (PIA), then multiplies the PIA by the ratio of years spent inside the U.S. divided by 35. This differs from the approach taken in totalization agreements.²⁰ First, totalization agreements adjust a hypothetical PIA, computed as if the individual worked a lifetime in the U.S., 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 U.S., rather than years *worked* in the U.S..²¹ This will preserve the favorable treatment under the Social Security System

²⁰Under totalization it is assumed that the normal work life is forty years long and ends at age 62. Average earnings are calculated based only on years worked in the U.S.. The ratio of earnings by the individual to average earnings by all covered wage earners is calculated for each year, and that ratio is used to compute a hypothetical lifetime earnings. For those who are turning 62 in 1997, the hypothetical AIME is based on the high 35 years of hypothetical covered earnings. A hypothetical PIA is calculated from the hypothetical AIME using the regular formula. Under totalization, for the person turning 62 in 1997, the benefit received is equal to the hypothetical PIA multiplied by the years of covered quarters of work in the U.S. divided by 140 quarters, the number of quarters in the high 35 years of earnings. The survivor benefit is treated symmetrically. Thus under totalization, the first decade of work in the U.S. results in 10/35 of total benefits, each of the next two decades of work increases benefits by another 2/7 of the total PIA, and the last decade of covered work brings in an additional 1/7 of the PIA. For further information, see: Office of International Policy, Social Security Administration, January, 1997, "Computation of U.S. Pro Rata Benefit Amounts Under International Social Security Agreements". These provisions are triggered upon application by the individual.

²¹If 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 U.S., 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 U.S. 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 U.S., suggesting multiple trips for these respondents.

of those who do not work every year.²²

The method used under totalization, and examined here, 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 U.S. until age 62 divided by 40.²³

A. 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 U.S..²⁴

²²The 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 U.S., remaining out of the labor market for the other years. Multiplying benefits by the ratio of years resident in the U.S. divided by 35 would allow the current progressivity to apply to those who work only a part of their lifetime spent in the U.S..

²³When 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.

²⁴It 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 secondly, the PIA would be proportionately reduced.

$$\begin{aligned}
(4) \quad AIME &= \frac{wx_s}{x} && \text{if } x < 35 \\
&= \frac{wx_s}{35} && \text{if } x \geq 35 \text{ and } x_s < 35 \\
&= w && \text{if } x_s \geq 35
\end{aligned}$$

In Equation 4, x again is the total number of years the individual is resident in the U.S., and x_s is the number of years spent in work covered by social security. Note that if the immigrant works all the years he or she is in the U.S., 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% of the first \$455 of AIME, 32% of AIME above \$455 to \$2741, and 15% of AIME over \$2741. The PIA modified for different years of participation is given in Equation 5.

$$\begin{aligned}
(5) \quad PIA &= \left(\frac{x}{35} \right) f(AIME) && \text{if } x < 35 \\
&= f(AIME) && \text{if } x \geq 35
\end{aligned}$$

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 3 reports the benefits under a prorated system where the PIA is multiplied by the ratio of years in the U.S. to 35. In these examples, the individual is assumed to have worked full-

time during each year in the U.S.. These benefits can be compared to those under the current system reported in Table 2.

To facilitate a comparison, Table 4 reports the ratio of benefits under the prorated system with 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 U.S. Those in the U.S. for ten years who earned \$20,000 or more per year would experience a fall in benefits of 38% to 45% under a prorated system with a 35 year reference period. Among those in the U.S. for twenty years, for those earning more than \$5,000 per year, benefit reductions under a prorated system range from 16 to 27 percent. At thirty years of work in the U.S., benefits for those earning more than \$5,000 per year would be reduced by 4% to 9%.

One could also argue that one should prorate benefits by multiplying the PIA in Equation 5 by the ratio of years of residence in U.S. 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 3 for those working less than 40 years would be reduced by 12.5% in view of the division of benefits by a higher denominator. These benefit reductions when prorating over a forty year period are reported in Table 5. For those who work ten years in the U.S. and earn \$20,000 or more, prorating over a forty year period reduces benefits to about half their value from the current system.

B. 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; 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 reduced 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 determining 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 beneficiaries. In the end, the individual receives the highest of the benefits he or she is

entitled to.²⁵

The structure of the social security benefit formula increases the likelihood 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 the benefits of the primary earner. To be entitled to half 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 twelve is \$32,892 or more in 1997, must earn one third of the amount earned by the primary earner.²⁶ 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

²⁵The relative sizes of the different groups among the retired in the overall U.S. population in 1994, when there were 20.8 million women beneficiaries age 62 or over, are as follows: Group 1: Eight 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: There were 5.3 million who were dual beneficiaries, receiving spouse or survivor benefits. Group 3: 7.5 million were entitled to workers benefits only. Source: Table 5.A.14, *Annual Statistical Supplement, 1995, to the Social Security Bulletin*, p. 214.

²⁶Using 1997 bend points, each dollar of the first \$5,460 of average indexed earnings per year results in almost three times the benefit as does each dollar of earnings between \$5,460 and \$32,892, and six times the benefit from average indexed earnings between \$32,892 and maximum covered earnings. 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 thirty percent of the primary earner's income for a spouse to be entitled to half the benefit.

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 spouse and survivor benefits reduced by years spent outside the U.S., then in the case of families with one immigrant and one U.S. born spouse, having worked outside the U.S. 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 a 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. 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.

IV. Labor Force Patterns and Earnings For Immigrants and Native Born

Before comparing the social security outcomes between U.S. and Foreign Born, it is useful to compare these populations with regard to various labor market outcomes. Table 6 makes this basic comparison using data from the Health and Retirement Study.

The HRS population includes households in which there is a person who is 51 to 61 years old in 1992. There are 12,650 observations, but only 9,824 of these household members were born from 1931 to 1941. Of these, 9,753 are in households where the person designated as the

financially knowledgeable respondent has cooperated with the survey.²⁷

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%) foreign born women working than native born women (62%). 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% vs. 18%), but the U.S. born men and women are also much less likely to report having earned less than a high school degree (41% vs. 23% among men, and 45% vs. 24% among women). Foreign born are roughly 38% Hispanic, vs. about 4% for U.S. born.

Three other figures in Table 6 are particularly noteworthy. First, 61% of the foreign born men in the HRS sample, and 42% of the foreign born women, have a foreign born spouse.²⁸ This

²⁷In those parts of our analysis which 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 hotdecked, 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.

²⁸When 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 6. For instance, suppose we are dealing with an immigrant female. In the HRS, married female immigrants have an immigrant husband 60.9 percent of the time. Based on other criteria for hot

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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. and foreign born who expect to receive social security benefits when they retire. While 87% of U.S. born men expect to receive social security benefits in the future, 86% of foreign born men expect to receive social security benefits, and for women, the comparable figures are 86% for U.S. born, and 79% for foreign born. The last point to make with the data in Table 6 is that earnings between U.S. and foreign born are roughly comparable. 1991 earnings for U.S. born men were \$40,076, while they were \$44,847 for foreign born men. The medians are closer, as 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 first order differences in incomes. We return to these issues below when we examine the distributions of income and wealth for U.S. and foreign born.

V. Social Security Benefits For The Sample of Immigrants In The HRS

A. 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.²⁹ Also the HRS has an

decking, suppose that 6 people match those criteria, 4 of whom are native and 2 of whom are foreign born. Using the HRS weights, 9.2 percent of married men are immigrants. In choosing which of the 6 potential matches to use, the weights of the immigrants are increased enough so that, rather than a 9.2 percent chance of having an immigrant husband, she has a 60.9 percent chance of having an immigrant husband.

oversample of 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.³⁰ The mean time of arrival in the U.S. is mid-1966, which means that by age 62 the average foreign born sample member will have been in the U.S. for 30 years.

Social security records were obtained from the Social Security Administration for 6,950 observations, amounting to 70% 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 7, Panel A describes covered work history by gender and immigrant status. Three types of information are reported in the table: percent of years with non-zero social security earnings, quarters of social security coverage, and average real covered earnings in non-zero years of coverage. Table 7, Panel B provides the same data, but for the subsample with a social security record. As can be seen, the results are very close between the full sample and the subsample with an attached social security record. They also are very close on other dimensions.

²⁹For detailed discussions of the labor market, social security pension and wealth data in the HRS, see Gustman, Mitchell and Steinmeier (1995), Mitchell, Olson and Steinmeier (1996), Gustman and Juster (1995) and Gustman, Mitchell, Samwick and Steinmeier (1997).

³⁰Among the foreign born in the HRS sample, 97 are Asian born, 62 Canadian born, 112 from the Caribbean, 60 from Central America, 117 from Cuba, 67 from Germany, 53 from Great Britain, 318 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.

Therefore, throughout the paper we report the results for the full sample, including imputed earnings histories, benefits and taxes for respondents without a social security record.

From Table 7A the ratio of foreign born women to men is 1.25 to 1 (547/437), 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 non-zero 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 vs. U.S. born men (83.4/122.4), and 67 percent for women (50.0/74.4).

Consistent with the reported earnings by HRS respondents in Table 6, average earnings in non-zero 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 7A, in Table 6, 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 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 reports these same data by decade of arrival into the U.S.. By raw count, 55 percent of the immigrants in the HRS entered the U.S. between 1960 and 1980 (529/957). Forty percent of the immigrants

(379/957) arrived in the U.S. 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 9 reports the present discounted value of taxes paid to date and benefits to be received, by immigrant status.³¹ In computing benefits for each spouse in a marriage, we follow the rules that provide the highest benefits that a spouse is entitled to. As noted earlier, wives are first entitled to benefits based on own earnings, but they may be dual beneficiaries if benefits based on their own earnings fall below the benefits they are entitled to as a spouse. Similarly, most surviving wives who earned benefits from their own work will receive additional benefits based on their husband's earnings. Accordingly, 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. Husband's benefits are treated symmetrically.

In 1992 dollars, from work to date, all men have paid taxes averaging \$104,808.³² The

³¹In 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.

³²Nominal taxes paid in earlier years are inflated to 1992 values using the nominal interest rate on ten 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, *Annual Report of the Board of Trustees*, 1995, Table II.D1, intermediate assumptions. Many other assumptions may be made in making money's worth calculations. See

respondent's own benefits add up to \$70,984 for men. Spouse and survivor benefits due to their earnings history also generate an additional \$21,819 in benefit value from the earnings of men. Women paid \$38,258 in taxes through 1991, and have accrued own benefits worth \$40,467, while the spouse and survivor benefits that women have earned from their own work are worth only \$539. Altogether, when the calculation is made for all households with a male in them, household benefits average \$122,053 and taxes paid amount to \$133,085, while when the calculation is made for all households with a woman in them, benefits average \$116,919 per household, while taxes average \$131,191.

Table 10 reports similar data by decade of entry into the U.S.. In our later analysis we will focus on the later arriving cohorts. For example, men entering the U.S. between 1970 and 1979 have paid 50 percent (53,370/107,456) of the taxes paid by U.S. born. However, they have accrued 58 percent (54,655/94,716) of the benefit that will be paid to U.S. born and their spouse based on own earnings, and 59 percent (43,151/72,535) of the man's benefit earned from own work. This difference will widen by the time that these groups reach retirement age. The reason is that U.S. born who have been in the labor force for more than 35 years will have paid taxes during some years (the years beyond 35 in which their earnings were lowest) that have no effect on their benefits. While we could compare taxes and benefits for each group, these comparisons are much more interesting when they are made on the assumption that the individual has worked until retirement age. We now turn to those comparisons.

Table 11 calculates taxes paid and value of benefits accrued to 1991 under the assumption

Leimer (1995) for a further discussion.

that respondents continue to work until the expected date of retirement they report.³³ Table 11 pertains to all U.S. or foreign born, while Table 12 reports the comparable data for foreign born according to decade of arrival in the U.S. . As noted previously, because of the interaction of the progressive benefit formula with the calculation of (indexed) earnings over a fixed 35 year period, we expect those who arrived later to receive a better deal under social security than those who arrived earlier. It can be seen from Table 12 that for cohorts of men, taxes paid exceed benefits based on respondent earnings for those arriving in any decade before 1980. Moreover, the earlier an immigrant entered the U.S., the wider the gap between benefits from the respondent's own earnings and the value of taxes paid.

The differences in Table 12 between taxes paid and benefits should not vary as sharply with date of arrival as did the differences discussed in Section II, Figure 6. The calculations in Section II 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

³³As noted in Table 6 above, foreign born men expect to retire about .8 of a year later than U.S. born men, while foreign born women expect to retire .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 11 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.

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.

Tables 13 reports the ratios of taxes paid by foreign to U.S. born, and the ratios of benefits to be received, as of 1992, all assuming retirement at the expected date. Columns 1 and 2 report these results under the current system. Given the earlier finding that those who will be in the U.S. for only a decade or two receive the most favorable treatment under social security, data are reported separately for those who arrived in the U.S. in the 1970's, and after 1980. Table 14 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 U.S. 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 man who entered in the 1970's 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 U.S. 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, a foreign born man who entered the U.S. 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 1970's 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 the U.S. in the 1980's 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 1980's, or 35 percent (35,632/102,287) of the benefits for a U.S. born man. For the man entering in the 1980's, benefits will exceed taxes, while the opposite is true for the U.S. born. A foreign born woman who entered in the 1980's 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 14, 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. 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 1970's, their benefits are just slightly below taxes paid. For men entering 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).

B. 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. and foreign born is to compute benefits using a prorated formula, and to compare the prorated 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 U.S. 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 averaged 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 U.S. divided by 35.

Tables 15 and 16 report benefits at the expected retirement age when this prorated formula is used with a 35 year base period. Table 17 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 13, 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 percent (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).³⁴ The benefit ratio is down from a

³⁴Notice that benefits received by U.S. born differ slightly between Tables 11 and 15. The reason is that foreign born spouses of U.S. born have their benefits based on own earnings reduced under prorating. As a result, the spouse and survivor benefits credited to the U.S. born

ratio of 83 percent for benefits received by foreign verses U.S. born men at the expected 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 percent (37,140/47,917) of the taxes paid by U.S. born women, while receiving 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 16 with Table 12, it can be seen that for foreign born men who entered the U.S. in the 1970's, as a result of prorating benefits for the years spent in the U.S. out of a 35 year base period, total accrued benefits based on own earnings would fall to \$56,519 from \$68,330. Thus from Table 17, 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 row 3 of Table 13, it can be seen that foreign born men who entered in the 1970's 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 1980's, 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 17 to be 32 percent. From row 5 of Table 13, men who entered the U.S. in the 1980's 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

spouse increase. These differences are very small, however. E.g., for U.S. born men, the survivor benefit increases under prorating from \$18,469 to \$18,485.

benefits (24,300/102,309) received by U.S. born. From Table 17, women who entered the U.S. in the 1970's would find their benefits reduced from prorating by 14 percent (28,671/33,456), while women who entered the U.S. in the 1980's would find prorating using a 35 year period reduced their benefits by 33 percent (10,445/15,664).

In Table 14 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 row 2, 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 .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, Tables 18 and 19 present results 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 U.S. divided by 40. As seen in Table 17, prorating over 40 years reduces benefits by for foreign born men by 13.6 percent, and by 15.1 percent for foreign born women. As seen in Table 13, 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) for taxes, and 68 percent (34,004/50,315) for benefits. Using a 40 year base period to prorate benefits, a man arriving in the U.S. in the 1970's 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 U.S. in the 1980's 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 14, 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 7, on average a U.S. born man will not accumulate a full forty years of covered quarters.³⁵ 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.

VI. 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 a series of tables from the Health and Retirement Study. Table 20 indicates total net wealth (including social security wealth), wealth from social security, and incomes for all households, and then the same measures

³⁵U.S. born male respondents with earnings histories have an average of 122 quarters of coverage, or 30.5 years. This means that they will have 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.

for U.S. and for foreign born separately.³⁶ Total net wealth also includes the projected value of pension wealth calculated from the detailed pension plan description obtained from employers, housing wealth, business assets, financial assets, and retirement assets (IRA's and Keogh's). Pension and social security wealth are based on work to date. While the social security 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.³⁷

Table 20 indicates that the mean total wealth of immigrants is 92 percent (454,391/491,864) of the mean total wealth of U.S. born, and that 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. The distribution of total wealth is skewed to the right, and so the wealth of the median ten percent of the population is lower than mean wealth. The wealth held by the median 10 percent of foreign born is 81 percent (275,265/337,861) of the wealth of U.S. born. Similarly, comparing the median ten percent of wealth holders in each group, foreign born average 84 percent (104,328/124,591) of the social security wealth held by U.S. born.

Incomes of immigrants are even closer to those of U.S. born. Indeed, at the mean,

³⁶Once again, social security wealth is estimated from the social security records for those in the HRS who had an attached record. For those without an attached social security record, social security wealth is imputed with the aid of the respondent's self reported earnings history and a series of questions asked on wave 3 of the HRS about covered earnings history.

³⁷For further details on the construction of the wealth and income variables, see Gustman, Mitchell, Samwick and Steinmeier (1997).

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.

Further details on the income and wealth distributions of U.S. and foreign born are presented in Table 21. The heterogeneity of the income and wealth distributions become 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 five percent of each distribution. The top quarters of the wealth distributions for foreign and U.S. born are very similar, as are the figures for the top five percent of each distribution. However, among the bottom quarter of the wealth and income distributions, foreign born are substantially poorer than U.S. born.

Table 22 reports social security wealth by place in the overall wealth distributions for U.S. and foreign born. As noted earlier, social security wealth represents a slightly larger fraction of total wealth for U.S. versus foreign born. However, from the fifth to seventy fifth percentiles, social security wealth is a larger share of total wealth for foreign than U.S. born. Within the top quarter of each wealth distribution, social security represents roughly the same share of total wealth .

Table 23 reports total and social security wealth by gender and marital status, by U.S. or foreign birth, while differentiating whether one or both spouses are U.S. or foreign born. Foreign born singles have substantially lower total wealth compared to U.S. born singles, with foreign born single women having the lowest total wealth of any group by far. Among single women, foreign born have about 71 percent of the total wealth of U.S. born, and 62 percent of social security wealth, while foreign born single men have 69 percent of the total wealth of U.S. born

men and 91 percent of the social security wealth of U.S. born. Couples with at least one spouse who is foreign born have 90 percent of the wealth of U.S. born couples, and 82 percent of the social security wealth. Couples with both spouses foreign born are poorer than those with one spouse foreign born, and a smaller share of their total wealth is represented by social security wealth.

Table 24 presents income and wealth by decade of arrival in the U.S.. What is most striking about the table are the sharp differences in both income and wealth for those arriving in the 1970's than in earlier years. These differences are even larger for those arriving after 1980 compared to those arriving before 1970.³⁸ Table 25 indicates the level of accrued social security wealth and the share of total wealth represented by social security, by decade of arrival in the U.S.. Social security wealth is a larger share of total wealth for the median 10 percent of the population than for the mean, no matter when they arrived.

VII. 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 U.S.. Many immigrant families are eligible for SSI, and for other income tested programs such as foodstamps 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.

Information on current participation in transfer programs is presented in Table 26. With the exception of foodstamps, foreign born in the HRS are making less rather than more use of

³⁸See Borjas (1992) and National Research Council (1997) for discussions of related findings.

transfer programs than U.S. born. U.S. born men are 4.6 percent more likely than foreign born men to report a health problem, and are 3.5 percent more likely to be participating in a disability program.

Although under the 1996 welfare reform, availability of SSI and other benefits is restricted for legal aliens who are not U.S. citizens, there is an exception for individuals who worked in the U.S. for 10 years or more.³⁹ Accordingly, because forty quarters of covered work are required to be eligible for social security, 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.

In Table 26, row 10, 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.⁴⁰ This represents five times the asset limits of \$2,000 for singles and \$3,000 for couples. Using these criteria, we see from Table 25

³⁹P.L. 104-193 prohibits SSI payments to noncitizen immigrants, and to legal refugees or asylees after 5 years in the U.S.. Lawful permanent residents with 40 quarters of coverage for social security are eligible, however. (Social Security Administration, Social Security Bulletin, Annual Statistical Supplement, 1996, p. 80.)

⁴⁰In 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.

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.

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, i.e., 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 forty quarters of covered employment.⁴¹

VIII. 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, Appendix E), but 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 (*Economic Report of the President, 1995*, Table B-72, interest rate on 10 year government bonds), and are using the intermediate

⁴¹Medicare is not valid outside the United States, so it will not enhance work incentives for those approaching age 65 with fewer than ten years of covered quarters, but who intend to return to their country of origin.

assumptions for interest rates from SSA (*Annual Report of Board of Trustees, 1995*, Table II.D1, intermediate assumptions, p. 56) 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 1980's far exceed the long term real interest rate at which future benefits are discounted under the Social Security Administration's intermediate scenario.

Table 27 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 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 ten year government bonds. The resulting present values of benefits fall below the present values of tax payments for both U.S. and for foreign born. Benefit tax ratios are reported in row 3. They indicate that the present value of benefits falls below the value of tax payments by about 10 percent for U.S. born, and benefits fall below taxes by about 4 percent for foreign born.

Line 4 of Table 27 reports the value of taxes when their value is inflated by the return on the social security portfolio.⁴² The ratio of benefits in line 1 to this measure of taxes suggests that social security benefits paid to members of the HRS cohort who were born in the U.S. fall below the value of taxes paid by about 6 percent. For foreign born, benefits fall below taxes by about one percent.

⁴²The average return in each year to social security investments is taken from the homepage of the Office of the Chief Actuary.

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 the bottom panel of Table 27, when we use 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.⁴³

IX. 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 the U.S. born prefer that immigrants participate in the Social Security System?⁴⁴

⁴³There are other considerations which may enter into a money's worth calculations, including tax rates. See Leimer (1995) for further discussion.

⁴⁴When 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. Different generations of U.S. born social security participants will have very different views of the value of immigrants from the perspective of postponing the day of reckoning in a pay as you go system that is not in steady state equilibrium. In particular, because there is less immediate pressure to reduce benefits when the flow of tax revenues is adequate to cover the flow of benefits, older generations will be strongly in favor of immigration from this perspective.

The National Research Council (1997, Chapter 7) compares the sum of benefits and costs for the stock of immigrants under various social insurance, transfer and tax programs. They consider the flow of benefits and costs from a pay as you go perspective, asking whether immigrants help the short term financial problems of social security (they do because of the age structure of the immigrant population). They also calculate costs and benefits over the longer term, considering the effects of a variety of programs on current and future budgets, any changes in taxes that are required to balance future budgets, and even the taxes and benefits accruing to second and third generation immigrants (see chapter 7 for the relevant discussion). Much of their interest is in the benefits and costs of a marginal immigrant, providing information that is central to the formulation of immigration policies.

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.⁴⁵ 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 reports that calculations by 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.⁴⁶ According to the National Research Council, about 30 percent of immigrants return to their country of origin, most within a decade of arriving in the U.S. (p. 7-6). Our own very rough calculation is consistent with

⁴⁵In Table 27, 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 constant interest rate.

⁴⁶However, with the change in country of origin from Europe for recent immigrants, Duleep is skeptical that the 30 percent emigration rate will continue.

an emigration rate of 30 percent.⁴⁷

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 the 5/6 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.⁴⁸

Duleep also finds that ".. most immigrants who leave before 10 years appear to emigrate

⁴⁷We begin by summing the number of legal immigrants to the U.S. 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 (cd rom), there were 2.389 million immigrants who were 49 to 59 in 1990. Next we adjust the number of resident immigrants born from 1931 to 1941 for illegal immigration. Dividing NIS estimates of the number of illegal immigrants in the U.S. by the CPS immigrant population, we find a rate of about 17 percent. The National Academy/Warren and Passel data suggest that about 15 percent of foreign born residents are illegal immigrants. Data from the National Academy of Sciences volume 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 U.S. leaves 2.031 million. Dividing the number who remain by the number ever immigrating, we have .68, or an emigration rate of just over thirty percent.

⁴⁸Duleep also finds that emigrants who are eligible for social security arrived at older ages than typical immigrants, leaving close to their retirement age after having stayed for ten or fifteen years. Specifically, Duleep (1994, p. 23) suggests that fewer than one fifth of the retired worker *beneficiaries* living abroad in the 1970's had left the U.S. before reaching age 58. She concludes "..based on an analysis of data on Social Security retired worker beneficiaries abroad, it would appear that unlike most adult immigrants, who enter the United States at the beginning of their work careers, immigrants who emigrate after becoming fully insured generally enter the United States at relatively late ages and then emigrate close to retirement age, 10 to 15 years later." (Duleep, 1994, p. 30). To the extent that the largest among the contributors to social security who emigrate do not leave until qualifying for social security benefits, the data we use from the Health and Retirement Study will already capture much of this population. The base year of the HRS includes those 51 to 61 years old, and this group is not yet eligible to receive social security benefits. For those who have already left, we treat benefits and costs as if they are roughly offsetting.

within the first five years of U.S. residence." (Duleep, 1994, p. 31). Since immigrants who remain in the U.S. have over eighty quarters of coverage, then if returnees had as many as 5 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 the earnings of those who stay.⁴⁹

Then the taxes paid by emigrants who receive no benefits will amount to about five percent of the taxes paid by immigrants who remained in the U.S. $[(.5)*(5/6)*(.25)*(.5)]$. 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 .960 (100,182/104,348) to .914 (100,182/[104,348*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 .894 (122,397/136,836).⁵⁰

X. Conclusions.

⁴⁹Duleep (1994, p. 20) cites statistics suggesting that four fifths of those who emigrate within the first ten years do so within the first five 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.

⁵⁰Again, from the perspective of providing comparable returns to U.S. and foreign born social security beneficiaries, there is no reason for the tax payments made by immigrants who leave the U.S. to be credited toward the accounts of immigrants who stay.

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 Annual Statistical Supplement*, 1996, p. 196, there are 10.1 million insured men and 8.5 million insured women who were 55 to 64 in 1996 (51 to 60 in 1992), representing roughly 10/11 of the HRS cohort.⁵¹ Approximately 9 percent of these are foreign born, amounting to .91 million foreign born men and .77 million foreign born women. Comparing Tables 11 and 15, 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 \$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 1941.⁵² 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 \$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 1941.⁵³

Turning from the HRS population to the full population, the cohort born from 1932 to

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

⁵²Therefore, multiplying 7.5 billion by (11/10), prorating over 35 years would reduce benefits for the full HRS cohort by approximately \$8.25 billion.

⁵³Multiplying \$15 billion by 11/10, the projected saving for the full HRS cohort is \$16.5 billion.

1941 represents one seventh of those who are now 25 to 64.⁵⁴

To summarize our findings, among the effects of applying the same progressive benefit formula to U.S. born and to immigrants, irrespective of time in the U.S.:

- The social security benefit formula replaces a higher fraction of total earnings for immigrants than for native born. The standard brackets associated with 90 percent, 32 percent and 15 percent replacement rates in the social security benefit formula are effectively widened for immigrants.
- Among foreign born who have worked for at least forty quarters, the benefit formula is more favorable to, and the rate of return is higher for foreign born who have been covered by social security for fewer years.
- For their first two decades of work in the U.S., higher wage immigrants receive 70 to 80 percent of the social security benefit they would be paid for a full worklife in the U.S. . Foreign born with lower wages receive 50 to 60 percent of the benefit paid over a forty year worklife for the first two decades of work. For their first two decades of work, foreign born working 20 years in the U.S. pay only half the payroll tax contributed by a comparable U.S. born worker.
- For a foreign born person earning \$20,000 or more, when working ten years in the U.S., the benefit cost ratio from social security is twice that for a U.S. born person with comparable earnings. A foreign born person working twenty years in the U.S. and earning \$10,000 or more has a benefit/cost ratio that is 36 percent to 57 percent higher than the

⁵⁴Earnings are lower for cohorts who arrived in the U.S. 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.

ratio for U.S. born with comparable earnings.

- Comparing accrued taxes and benefits between U.S. and foreign born men who were 51 to 61 years old in 1992, at their expected date of retirement the foreign born men will have paid about 76 percent of the taxes paid by U.S. born, but they and their family will receive 83 percent of the benefits from own work that a U.S. born male receives. In the case of women, who earn from their own work about half the benefits accruing to men and pay a fraction more than a third of the taxes paid by men, by their expected date of retirement, foreign born will have paid about 78 percent of the taxes and receive 80 percent of the benefits for U.S. born.
- Foreign born men who entered the U.S. in 1970 to 1979 will pay 55 percent of the taxes paid by U.S. born men. Total family benefits from own earnings for the foreign born males who entered the U.S. in the 1970s amounts to 67 percent of the family benefits from own earnings for U.S. born. A man entering after 1980 will pay 19 percent of the taxes paid by a U.S. born man, earning 35 percent of the benefits. For a foreign born woman who entered in the 1970's, taxes are 57 percent of the taxes paid by a U.S. born woman. Benefits are 67 percent of the benefits credited to a U.S. born woman based on her own work. For a woman entering after 1980, the figures are 18 percent of taxes paid by a U.S. born woman, and receipt of 31 percent of the benefits.

Findings with regard to the effects of a policy that would prorate benefits over years of residence in the U.S. include the following:

- If instead of the current system, benefits of foreign born were prorated over the share of a 35 year period spent in residence in the U.S., benefits of foreign born men and women

would each fall by 7 percent. Foreign born men who entered the U.S. in the 1970's would have their benefits fall by 17 percent. For those men who entered in the 1980's, benefits would fall by 32 percent. The comparable figures for women are 14 percent for those who entered in the 1970's and 33 percent for those who entered after 1980.

- If benefits were prorated over a 35 year period, foreign born men on average would pay 76 percent of the taxes paid by U.S. born, and foreign born men and their spouses would receive 78 percent of the benefits for their families that are received by U.S. born (total household benefits would be in the same ratio). For a foreign born woman, under a prorated system with a 35 year base period, taxes are 78 percent of the taxes paid by a U.S. born woman, and benefits are 74 percent of the benefits credited to work by a U.S. born woman.
- Many U.S. born taxpayers contribute payroll taxes for more than 35 years. Accordingly, we also considered the effect of prorating benefits over 40, rather than 35 years. Benefits of foreign born men would be reduced as a result of prorating over 40 instead of 35 years by an additional 7.4 percent. For women, the reduction would be an additional 9.4 percent. Under a system where benefits are prorated over a 40 year base period, foreign born men would pay 76 percent of the taxes paid by U.S. born, and would receive 72 percent of the benefits. The comparable figures for women based on own earnings are 78 percent of taxes and 68 percent of benefits.

The data suggest that the current system, where social security benefits of immigrants are increased because certain years before an individual immigrates to the U.S. are counted as years of zero earnings, is not easily justified by patterns of income or wealth differences observed

between immigrants and U.S. born.

- Mean total wealth of immigrants is 92 percent of the mean total wealth of U.S. born and social security wealth of immigrants is 86 percent of the social security wealth of U.S. born. Social security wealth accounts for a little over a fifth of total wealth for each group. The median 10 percent of wealth holders among foreign born has 83 percent of the wealth of U.S. born. Comparing the median ten percent of wealth holders in each group, foreign born average 84 percent of the social security wealth held by U.S. born.
- At the mean, immigrants have higher incomes than U.S. born in the HRS, exceeding the incomes of U.S. born by 3 percent. At the medians of the relevant distributions, incomes of foreign born are 91.5 percent of the incomes of U.S. born.
- 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 five percent. The top quarter of the wealth distributions of U.S. and foreign born are very similar. However, among the bottom quarter of the wealth and income distributions, foreign born are substantially poorer than U.S. born.
- The HRS data also reflect the very sharp difference in both income and wealth with date of arrival in the U.S.. Incomes are lower for immigrants arriving in the 1970's than for those arriving in earlier years, and turn sharply lower for those arriving after 1980.

From a money's worth perspective, when one uses the interest rate on 10 year government bonds or on the social security portfolio to raise the value of payroll tax contributions to the base year of 1992, while discounting benefits at the real interest rate projected by SSA in its intermediate assumptions, the present value of social security benefits falls below the present

value of tax payments by U.S. born. Only when a constant low real interest rate is used to value payroll tax contributions and benefits would one conclude that social security provides a positive return to the HRS cohort.

Finally, we investigated the question of whether, in the long run, the Social Security System benefited financially from having the HRS generation of immigrants included in the system.

- Even though immigrants are receiving a disproportionately high return on social security taxes paid relative to U.S. born, the present value of benefits is below the present value of taxes paid for both immigrants and U.S. born. Therefore, even under the current system, native born will benefit from having most immigrants in the HRS generation covered by the system. Allowing for the tax contributions made by those immigrants who emigrate without qualifying for social security benefits makes it even more attractive, from the perspective of U.S. born, to include immigrants in social security. Only immigrants arriving after 1980 receive benefits that exceed the value of the taxes they paid. Should benefits for immigrants be prorated over a 35 or 40 year period, immigrants would make even more of a net contribution to social security.

Implications

The Social Security System treats years of residence outside the U.S. 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 increases benefits for many immigrants who have similar wealth and incomes as U.S. born, especially for 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 U.S..

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 U.S. 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 U.S. 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 including immigrants from the HRS cohort.

Table 1: Illustrative Calculation Of The Role of Brackets In The Social Security Benefit Formula for U.S. 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	0.08	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

Table 2: Yearly Social Security Retirement Benefits Earned, By Years of Work In The U.S., For Hypothetical, Constant Real Yearly Earnings

Real Yearly Earnings	Years Of Work Under Social Security			
	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

Table 3. Benefits Under A Prorated System With A 35 Year Base Period

Real Yearly Earnings	Years Of Work Under Social Security			
	10 Years	20 Years	30 Years	40 Years (U.S. Born)
\$5,000	\$1,286	\$2,571	\$3,857	\$4,500
\$10,000	\$1,819	\$3,638	\$5,457	\$6,367
\$20,000	\$2,733	\$5,467	\$8,200	\$9,567
\$30,000	\$3,648	\$7,295	\$10,943	\$12,767
\$40,000	\$4,217	\$8,433	\$12,650	\$14,758
\$50,000	\$4,645	\$9,291	\$13,936	\$16,258
\$60,000	\$5,074	\$10,148	\$15,222	\$17,758
≥\$65,400	\$5,305	\$10,611	\$15,916	\$18,568

Note: Years of work under social security are taken to be identical to years resident in the U.S. for purposes of these illustrative calculations.

Table 4. 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 U.S. for purposes of these illustrative calculations.

Table 5. Ratio of Benefits Under A Prorated System With A 40 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	0.88	0.88	0.88	1.00
\$10,000	0.62	0.64	0.81	1.00
\$20,000	0.48	0.70	0.83	1.00
\$30,000	0.54	0.74	0.84	1.00
\$40,000	0.54	0.70	0.80	1.00
\$50,000	0.53	0.66	0.80	1.00
\$60,000	0.51	0.64	0.81	1.00
≥\$65,400	0.51	0.65	0.81	1.00

Note: Years of work under social security are taken to be identical to years resident in the U.S. for purposes of these illustrative calculations.

Table 6: 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 Hrs/Yr (%)	1.0	2.0	1.0	2.1	0.5	1.2
Working 400- 1499 Hrs/Yr (%)	6.5	13.3	6.4	13.7	7.6	9.8
Working 1500 Hrs or More (%)	70.9	45.2	70.9	45.6	71.3	41.0
Avg Hrs 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 < HS	24.4	25.9	22.8	23.8	40.8	44.7
Percent HS 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 Grad 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	61	41.5
Percent Receiving SS	5.2	4.9	5.4	4.9	3.1	5.4
Percent Expecting SS	87.0	84.9	87.2	85.6	85.5	79.2
Average '91 Earnings	40500	19246	40076	19126	44847	20485
Unweighted Observations	4,589	5,164	4,152	4,617	437	547

Source: Health and Retirement Study, Wave 1. 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.

Table 7: Work History From Social Security Record

A. 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 Non-Zero 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 Non-Zero 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

B: Including Only Those Observations With A Social Security Record

	All		U.S. Born		Foreign Born	
	Men	Women	Men	Women	Men	Women
Percent of Years With Non-Zero Earnings Since Age 21	82.4	53.9	84.2	54.9	61.9	43.7
Quarters of Coverage	119.0	73.8	122.0	75.4	84.6	56.5
Average Earnings In Non-Zero Years of Coverage	\$23,978	\$11,610	\$24,024	\$11,516	\$23,450	\$12,603
Observations	3,251	3,699	2,970	3,364	281	335

Source: Health and Retirement Study, age eligible individuals for whom a social security earnings record was obtained.

Table 8: Work History From Social Security Record By Year of Entry To U.S.

	Before 1940		1940 to 49		1950 to 1959		1960 to 1969		1970 to 1979		1980 Or Later	
	Men	Women	Men	Women	Men	Women	Men	Women	Men	Women	Men	Women
Pct Non-Zero 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 Ave of Non-Zero Covered Earnings	125.5 \$26,751	83.4 \$12,469	129.9 \$26,333	82.5 \$13,577	117.3 \$25,514	61.0 \$12,376	95.0 \$27,316	59.4 \$13,632	61.8 \$22,911	37.0 \$9,983	24.4 \$15,646	11.7 \$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 U.S. and reported year when they entered. When social security records are not reported, earnings histories are estimated from self reported data.

Table 9: Currently Accrued Taxes and Benefits Under Social Security In \$1992

	All		U.S. Born		Foreign Born	
	Men	Women	Men	Women	Men	Women
Discounted Taxes	104,808	38,258	107,456	39,321	77,628	28,716
PIA (1992 \$)	8,646	4,135	8,832	4,247	6,746	3,123
<u>Benefits: Based On Respondent Earnings</u>						
Own	70,984	40,467	72,535	41,606	55,070	30,243
Spouse	6,234	297	6,295	312	5,602	170
Survivor	15,585	242	15,886	249	12,499	183
Total	92,803	41,007	94,716	42,166	73,171	30,596
<u>Benefits: Based On Spouse Earnings</u>						
Own	28,592	54,952	29,222	55,944	22,120	46,045
Spouse	340	6,035	336	6,069	379	5,728
Survivor	318	14,926	318	15,087	315	13,476
Total	29,249	75,912	29,876	77,100	22,814	65,248
Total HH Taxes	133,085	131,191	136,403	115,955	99,024	88,380
Total HH Benefits	122,053	116,919	124,592	119,267	95,985	95,845
Observations	4,589	5,164	4,152	4,617	437	547

Source: Health and Retirement Study, age eligibles. 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 SSA intermediate projections, Annual Report of Board of Trustees of Social Security, 1995, Table II.D1, p. 56..

Table 10: Currently Accrued Benefits And Taxes By Year Immigrant Entered The U.S.

	Before 1940		1940 to 1949		1950 to 1959		1960 to 1969		1970 to 1979		1980 Or Later	
	Men	Women	Men	Women	Men	Women	Men	Women	Men	Women	Men	Women
Discounted Taxes	115,076	39,280	116,685	45,922	108,886	34,653	96,467	36,820	53,370	20,242	11,881	3,929
PIA (1992 \$)	9,509	4,229	9,372	4,765	8,903	3,649	8,102	3,901	5,286	2,414	1,816	651
Benefits: Based On Respondent Earnings												
Own	83,644	45,569	80,641	46,180	72,729	36,309	65,554	36,878	43,151	23,167	14,209	6,249
Spouse	8,456	0	12,354	266	8,478	150	5,864	79	3,342	345	1,741	183
Survivor	23,494	533	21,752	157	18,558	182	13,797	149	8,172	257	3,345	113
Total	115,593	46,102	114,748	46,603	99,764	36,640	85,215	37,106	54,665	23,769	19,295	6,545
Benefits: Based On Spouse Earnings												
Own	16,427	82,357	17,164	53,463	20,951	63,153	27,907	49,204	25,493	36,494	8,474	14,772
Spouse	0	8,032	0	4,302	479	8,650	90	5,552	305	4,796	886	2,511
Survivor	0	22,538	12	15,159	261	18,651	223	13,432	430	11,473	481	5,805
Total	16,427	112,928	17,176	72,923	21,691	90,455	28,220	68,188	26,228	52,762	9,841	23,088
Total HH Taxes	124,396	147,592	130,385	114,387	127,798	117,404	124,382	104,239	79,580	64,324	18,906	18,559
Total HH Benefits	132,020	159,030	131,924	119,526	121,455	127,095	113,435	105,293	80,893	76,532	29,135	29,633
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 U.S. and reported year when the entered. See Table 9 for details on the construction of the present value measures.

Table 11: 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
<u>Benefits: Based On Respondent Earnings</u>						
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
<u>Benefits: Based On Spouse Earnings</u>						
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 HH Taxes	162,316	131,769	165,788	134,617	126,681	106,207
Total HH 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. See Table 9 for details on the construction of the present value measures.

Table 12: Social Security Taxes Paid and Value of Benefits, Assuming Retirement At Expected Age, By Year Immigrant Entered The U.S.

	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's 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 HH 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 HH 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 U.S. and reported year when the entered. See Table 9 for details on the construction of the present value measures.

Table 13: Ratios Of Social Security Taxes For Foreign Born to U.S. Born, And Of Benefits,
Under Different Schemes For Prorating Benefits Of Foreign Born

Relevant Group	Ratio of Taxes	Ratio of Benefits		
		Current Rules	Prorate Over 35 Years	Prorate Over 40 Years
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 1970's	0.55	0.67	0.55	0.48
Foreign Born Women Arriving In 1970's	0.57	0.67	0.57	0.50
Foreign Born Men Arriving In 1980's	0.19	0.35	0.24	0.21
Foreign Born Women Arriving In 1980's	0.18	0.31	0.21	0.18

Calculations are made on the basis of expected retirement dates using HRS data. See Table 9 for details on the construction of the present value measures.

Table 14: Ratios Of Social Security Benefits From Own Earnings To Social Security Taxes Paid
For U.S. Born And Foreign Born

Relevant Group	Men			Women		
	Current Rules	Prorate Over 35 Years	Prorate Over 40 Years	Current Rules	Prorate Over 35 Years	Prorate Over 40 Years
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 From 1970 to 1979	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

Calculations are made on the basis of expected retirement dates using HRS data. See Table 9 for details on the construction of the present value measures.

Table 15: 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
<u>Benefits: Based On Respondent Earnings</u>						
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
<u>Benefits: Based On Spouse Earnings</u>						
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 HH Taxes	162,316	131,769	165,788	134,617	126,681	106,207
Total HH 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. See Table 9 for details on the construction of the present value measures.

Table 16: Social Security Taxes Paid and Value of Benefits Assuming Retirement At Expected Age, Based On Year Immigrant Entered The U.S. And Prorating Benefits For Foreign Born With A 35 Year Base Period

	Before 1940		1940-49		1950-59		1960-1969		1970-1979		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
<u>Benefits: Based On Respondent's Earnings</u>												
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
<u>Benefits: Based On Spouse Earnings</u>												
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 HH Benefits	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 HH 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 U.S. and reported year when the entered.
See Table 9 for details on the construction of the present value measures.

Table 17: Percentage Point Reduction In Immigrants Benefits Due To Prorating

Relevant Group	Base Period 35 Years		Base Period 40 Years	
	Men	Women	Men	Women
All Foreign Born	6.8	7.3	13.6	15.1
Immigrants Arriving From 1970 to 1979	17.3	14.3	27.6	24.9
Immigrants Arriving After 1980	31.8	33.3	40.0	41.7

Calculations are made on the basis of expected retirement dates using HRS data. See Table 9 for details on the construction of the present value measures.

Table 18: Social Security Taxes Paid and Value of Benefits Assuming Retirement At Expected Age, Prorating Benefits For Foreign Born With A 40 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 \$)	9,611	4,935	9,856	5,096	7,099	3,491
<u>Benefits: Based On Respondent Earnings</u>						
Own	76,146	47,925	78,132	49,537	55,771	33,454
Spouse	5,603	306	5,702	321	4,592	175
Survivor	18,050	449	18,507	457	13,361	375
Total	99,800	48,680	102,340	50,315	73,725	34,004
<u>Benefits: Based On Spouse Earnings</u>						
Own	37,459	56,532	38,331	57,874	28,516	44,496
Spouse	422	5,432	421	5,513	435	4,705
Survivor	665	16,353	662	16,639	698	13,778
Total	38,547	78,317	39,413	80,026	29,649	62,979
Total HH Taxes	162,316	131,769	165,788	134,617	126,681	106,207
Total HH Benefits	138,347	126,997	141,754	130,341	103,374	96,983
Observations	4,589	5,164	4,152	4,617	437	547

Source: Health and Retirement Study, age eligibles. See Table 9 for details on the construction of the present value measures.

Table 19: Social Security Taxes Paid and Value of Benefits Assuming Retirement At Expected Age, Based On Year Immigrant Entered The U.S. And Prorating Benefits For Foreign Born With A 40 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	4,181	9,927	5,596	9,813	4,005	8,356	4,386	5,117	2,576	2,207	941
<u>Benefits: Based On Respondent's Earnings</u>												
Own	82,433	44,828	81,129	53,859	77,026	39,459	65,691	41,131	40,080	24,452	16,464	8,700
Spouse	7,950	0	10,963	290	7,755	122	4,808	94	2,000	352	1,174	240
Survivor	13,607	643	26,221	201	22,592	362	13,691	503	7,360	329	3,731	197
Total	103,989	45,471	118,313	54,350	107,373	39,943	84,190	41,728	49,440	25,133	21,369	9,137
<u>Benefits: Based On Spouse Earnings</u>												
Own	45,416	83,839	20,641	50,806	27,050	61,692	34,957	48,617	30,947	32,822	14,812	12,744
Spouse	0	9,199	0	3,338	541	7,218	120	5,031	397	3,117	1,013	1,515
Survivor	29	24,556	75	16,264	452	20,445	781	13,883	733	10,229	1,025	4,543
Total	45,445	117,595	20,717	70,408	28,043	89,355	35,859	67,531	32,077	46,168	16,850	18,801
Total HH 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 HH Benefits	149,434	163,066	139,030	124,758	135,416	129,298	120,049	109,259	81,517	71,302	38,219	27,938
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 U.S. and reported year when the entered. See Table 9 for details on the construction of the present value measures.

Table 20: Total Net Wealth, Social Security Wealth and Net Income, By Immigrant Status For All Households (\$1992)

Source of Wealth	Observations	Mean For Sample		Value for Median 10% of Households	
		Value (\$)	Percent of Total Net Wealth (%)	Value (\$)	Percent of Total Net Wealth (%)
		<u>Both U.S. and Foreign Born</u>			
Total Net Wealth	7,607	487,450	100	331,460	100
Social Security Wealth		112,316	23	123,301	37
Net Income (\$1991)		46,249		35,828	
		<u>Households With All U.S. Born</u>			
Total Net Wealth	6,658	491,864	100	337,861	100
Social Security Wealth		114,212	23	124,591	37
Net Income (\$1991)		46,082		36,202	
		<u>Households With Any Foreign Born</u>			
Total Net Wealth	948	454,391	100	275,265	100
Social Security Wealth		98,115	22	104,328	38
Net Income (\$1991)		47,500		33,131	

Source: Authors' calculations using HRS Wave 1. Net wealth is defined as net worth, assets less liabilities. Pension value is based on SPD data, and is calculated using the projected method from employer-provided plan descriptions for DB plans and contributions for DC plans. Social security values are based on the social security earnings history for those respondents for whom a record is available, and otherwise are estimated from the self reported covered earnings history collected by the HRS. Social security is the value from to date. Pension value is computed as of date of expected retirement and prorated on the basis of share of work until retirement that has been completed to date. Median ten percent of households are those with total net wealth in the forty fifth to fifty fifth percentiles. All data are weighted by HRS sample weights.

Table 21: Household Total Income and Total Net Wealth by Place in the Respective Distribution
(Thousands of Dollars)

Income or Wealth Percentile	Income Distribution (Thousands of Dollars)			Total Net Wealth Distribution (Thousands of Dollars)		
	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

All data are weighted by HRS sample weights. Base year is 1992 for wealth and 1991 for income. See Table 20 for further details on construction of social security and pension wealth.

Table 22: Household Total Wealth and Net Wealth From Social Security by Place in the
Respective Wealth Distribution
(Thousands of 1992 Dollars)

Total Net Wealth Percentile	Social Security Wealth (Thousands of Dollars)			Social Security As A Percent Of Total Net Wealth (%)		
	All	U.S. Born	Foreign Born	All	U.S. Born	Foreign Born
0 - 5	11,765	15,324	1,026	417%	255%	-90%
5 - 10	35,201	39,498	11,680	81%	80%	100%
10 - 25	67,738	71,501	40,509	65%	63%	71%
25 - 50	109,182	111,458	88,494	45%	45%	49%
50 - 75	135,975	137,153	125,471	30%	30%	31%
75 - 90	150,701	150,846	149,467	20%	20%	20%
90 - 95	157,374	158,025	152,554	14%	14%	13%
95 - 100	160,594	161,434	155,246	6%	6%	6%
45 - 55	123,301	124,591	104,328	37%	37%	38%
Mean	112,316	114,212	98,115	23%	23%	22%

All data are weighted by HRS sample weights. See Table 20 for further details on construction of social security and pension wealth.

Table 23: Social Security Wealth And Household Total Net Wealth By Immigrant Status And Household Composition (\$1992)

Source of Wealth	No. Obs.	Mean For Sample		Value for Median 10% of Households	
		Value (\$)	Foreign As A Percent of Total for U.S. Group	Value (\$)	Foreign As A Percent of Total For U.S. Group
		Single Males U.S. Born			
Total Net Wealth	687	342,492		182,855	
Social Security Wealth		62,947		69,218	
		Single Males Foreign Born			
Total Net Wealth	54	237,852	69	117,111	64
Social Security Wealth		57,201	91	65,416	95
		Single Female U.S. Born			
Total Net Wealth	1,457	198,931		124,385	
Social Security Wealth		48,347		53,141	
		Single Females Foreign Born			
Total Net Wealth	175	140,948	71	55,345	44
Social Security Wealth		30,098	62	33,592	63
		Couples U.S. Born			
Total Net Wealth	4,514	611,259		446,381	
Social Security Wealth		143,860		149,928	
		Couples With At Least One Spouse Foreign Born			
Total Net Wealth	719	550,245	90	362,492	81
Social Security Wealth		118,419	82	135,645	90
		Couples With Both Spouses Foreign Born			
Total Net Wealth	371	483,014	79	238,738	53
Social Security Wealth		101,497	71	110,114	73

All data are weighted by HRS sample weights. See Table 20 for further details on construction of social security and pension wealth.

Table 24: Household Income and Net Wealth By Year of Arrival In U.S.

Category	Observations	Average Income (\$)	Income For Median 10% (\$)	Average Wealth (\$)	Wealth For Median 10% (\$)
Before 1940	29	40,506	32,446	791,877	531,877
1940 to 1949	57	54,126	39,359	594,899	500,184
1950 to 1959	233	50,021	35,384	507,161	362,136
1960 to 1969	288	58,190	39,284	477,550	293,532
1970 to 1979	182	41,178	30,608	405,205	180,646
1980 or Later	125	26,382	16,393	188,836	56,967

Income is in 1991 dollars, wealth in 1992 dollars. All data are weighted by HRS sample weights.

Table 25: Household Wealth Due to Social Security And Share of Wealth Due to Social Security
By Year of Arrival In U.S.

Category	Average Social Security Wealth (\$)	Social Security Wealth For Median 10% (\$)	Average Social Security Wealth As Share of Total Wealth (%)	Social Security Wealth As Share of Total Wealth For Median 10% (%)
Before 1940	158,635	183,880	20	35
1940 to 1949	137,003	135,309	23	27
1950 to 1959	124,167	139,155	24	38
1960 to 1969	102,017	112,938	21	38
1970 to 1979	76,746	82,822	19	46
1980 or Later	29,644	16,375	16	29

Income is in 1991 dollars, wealth in 1992 dollars. All data are weighted by HRS sample weights.

Table 26: Transfer Statistics

	All		U.S. Born		Foreign Born	
	Men	Women	Men	Women	Men	Women
	Percentages					
Permanent Health Prob	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	3251	3699	2970	3364	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.

Table 27: Money's Worth Calculations

	All	U.S. Born	Foreign Born
	<u>Benefits Discounted With SSA Interest Rate Projection</u>		
PV Benefits	120,279	122,397	100,182
	<u>Taxes Inflated By Ten Year Gov't Bond Rate</u>		
PV Taxes	133,739	136,836	104,348
PV Benefits/PV Taxes	0.899	0.894	0.960
	<u>Taxes Inflated By Return On Social Security Portfolio</u>		
PV Taxes	127,265	130,022	101,103
PV Benefits/PV Taxes	0.945	0.941	0.991
	<u>Benefits and Taxes Calculated With 2.3% Real Interest</u>		
PV Benefits	141,675	144,148	118,213
PV Taxes	117,692	120,390	92,091
PV Benefits/PV Taxes	1.204	1.197	1.284

All values are calculated assuming work until expected retired date, discounted to 1992.

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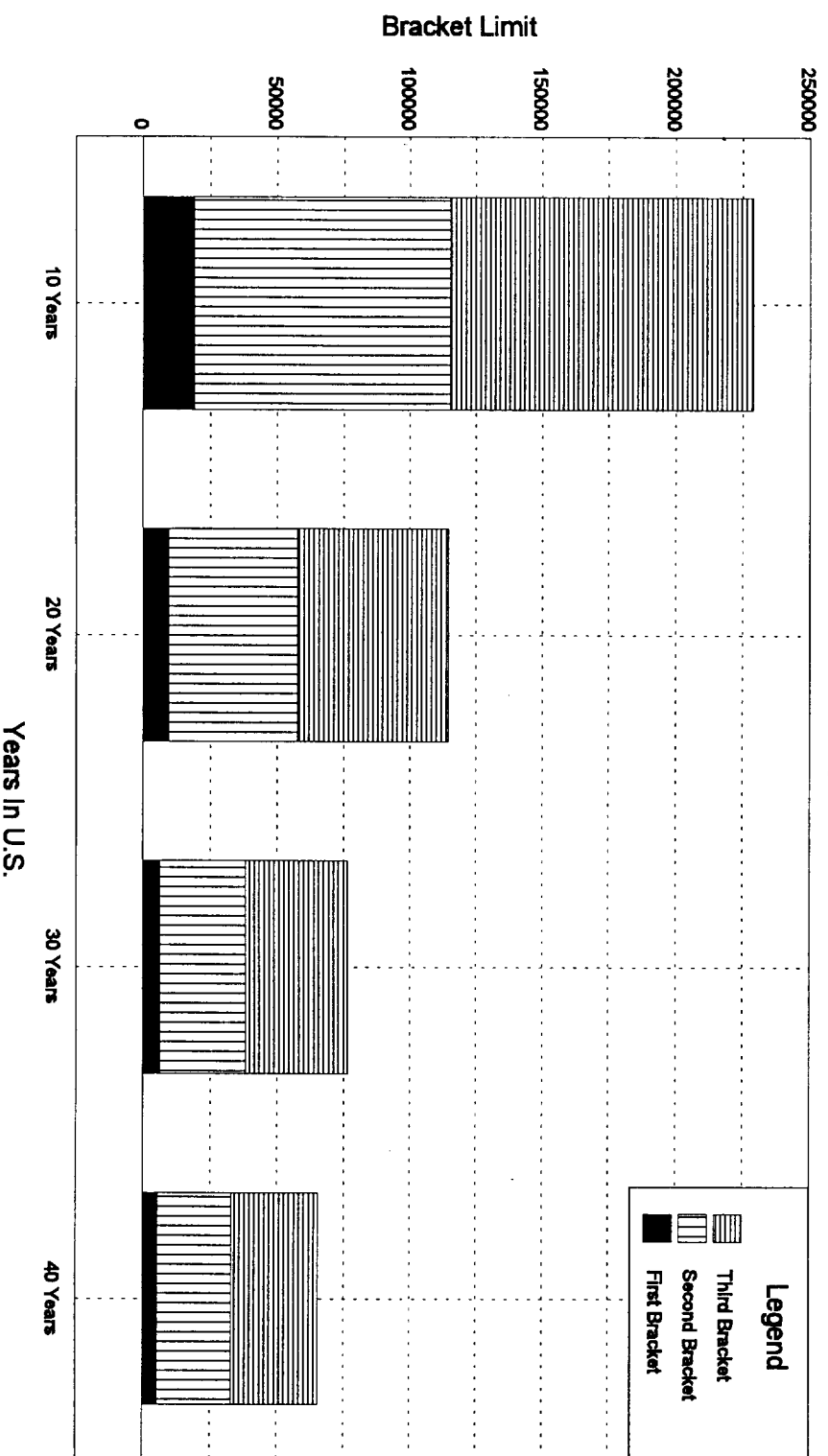
Appendix Table 1: Distribution of Immigrants By Decade of Immigration and Average Real Covered Earnings In Years Worked

<u>Men</u>						
Year Immigrated	<u>Real Covered Earnings in Yr. Worked</u>					Sum of Columns
	< 5000	5000- 10000	10000- 20000	20000- 30000	>30000	
Before 40	0	0	1	0	2	3
40 to 49	0	0	4	6	6	16
50 to 59	3	5	23	37	25	93
60 to 69	3	7	38	33	53	134
70 to 79	9	12	33	25	25	104
80 or later	10	17	24	9	6	66
Sum of Rows	25	41	123	110	117	416

<u>Women</u>						
Year Immigrated	<u>Real Covered Earnings in Yr. Worked</u>					Sum of Columns
	< 5000	5000- 10000	10000- 20000	20000- 30000	>30000	
Before 40	1	0	3	3	0	7
40 to 49	5	11	5	1	3	25
50 to 59	17	35	39	20	5	116
60 to 69	26	36	54	28	14	158
70 to 79	22	22	35	8	6	93
80 or later	11	12	24	3	1	51
Sum of Rows	82	116	160	63	29	450

Figure 1

Bracket Amounts By Years In U.S.



**Figure 2. Fraction of All Foreign Born Who Entered
in the Indicated Year and Earn More than \$5,000 Per Year.**

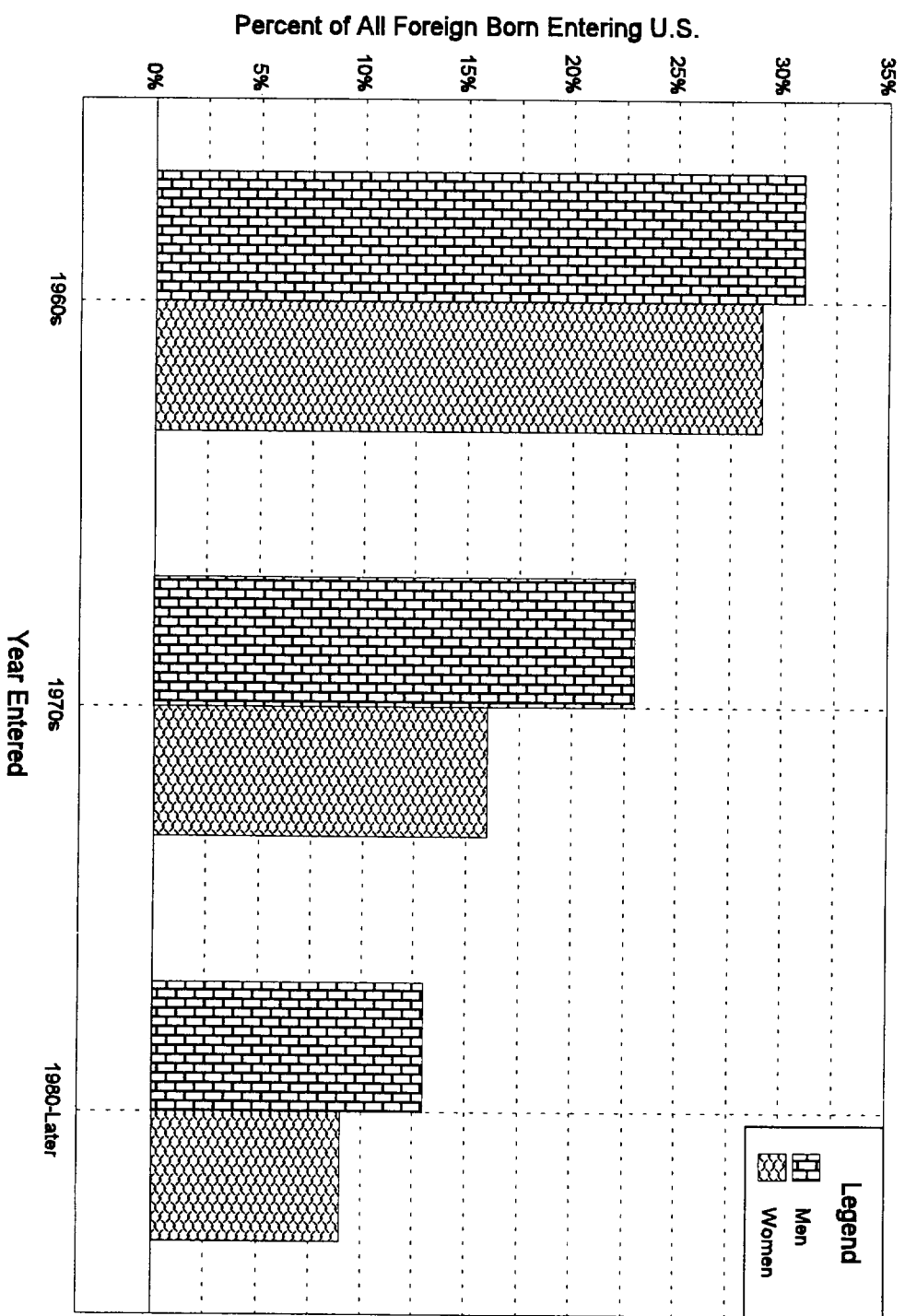


Figure 3

SS Benefit By Decades of Coverage and Real Yearly Earnings

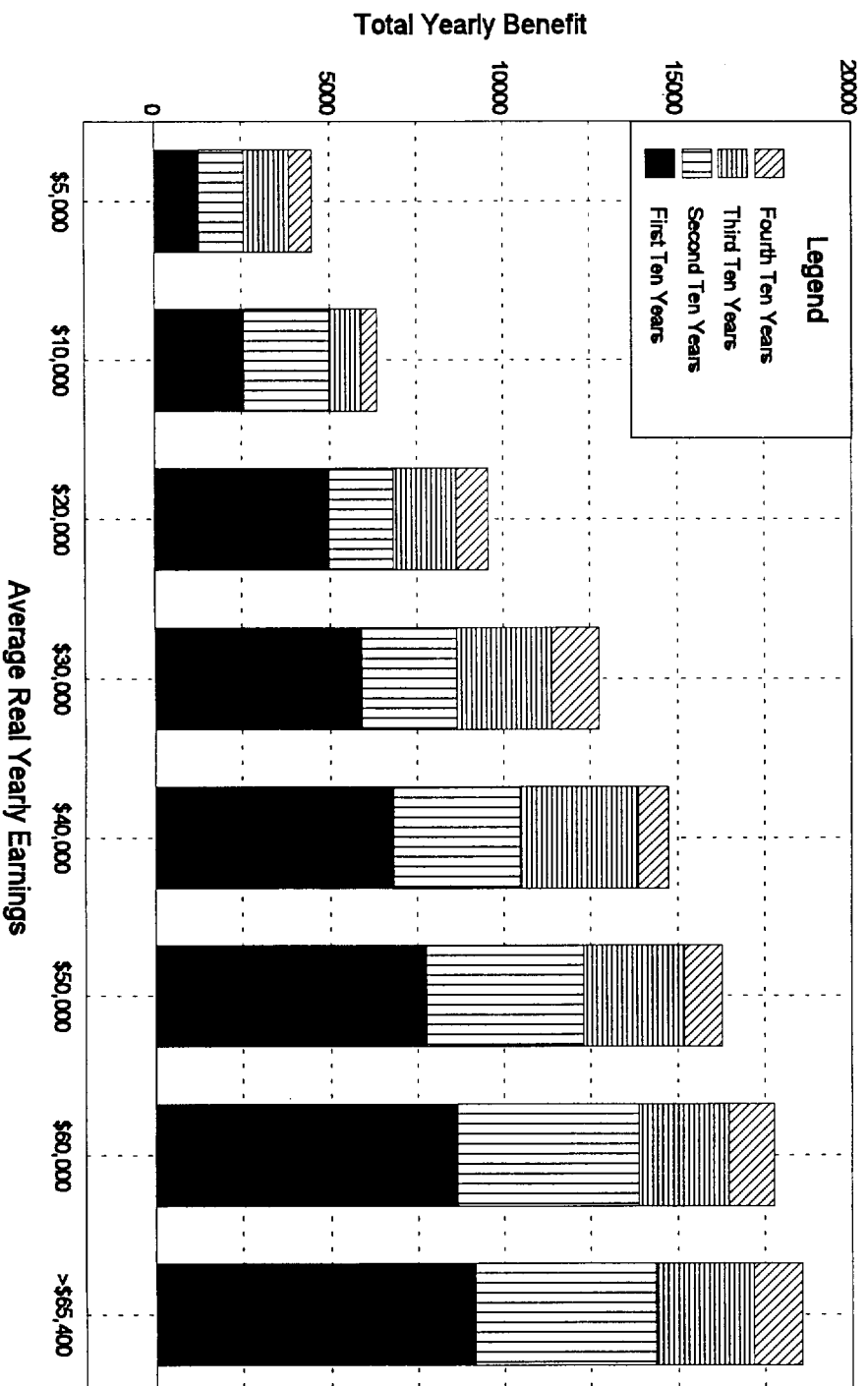


Figure 4

SS From Additional Coverage

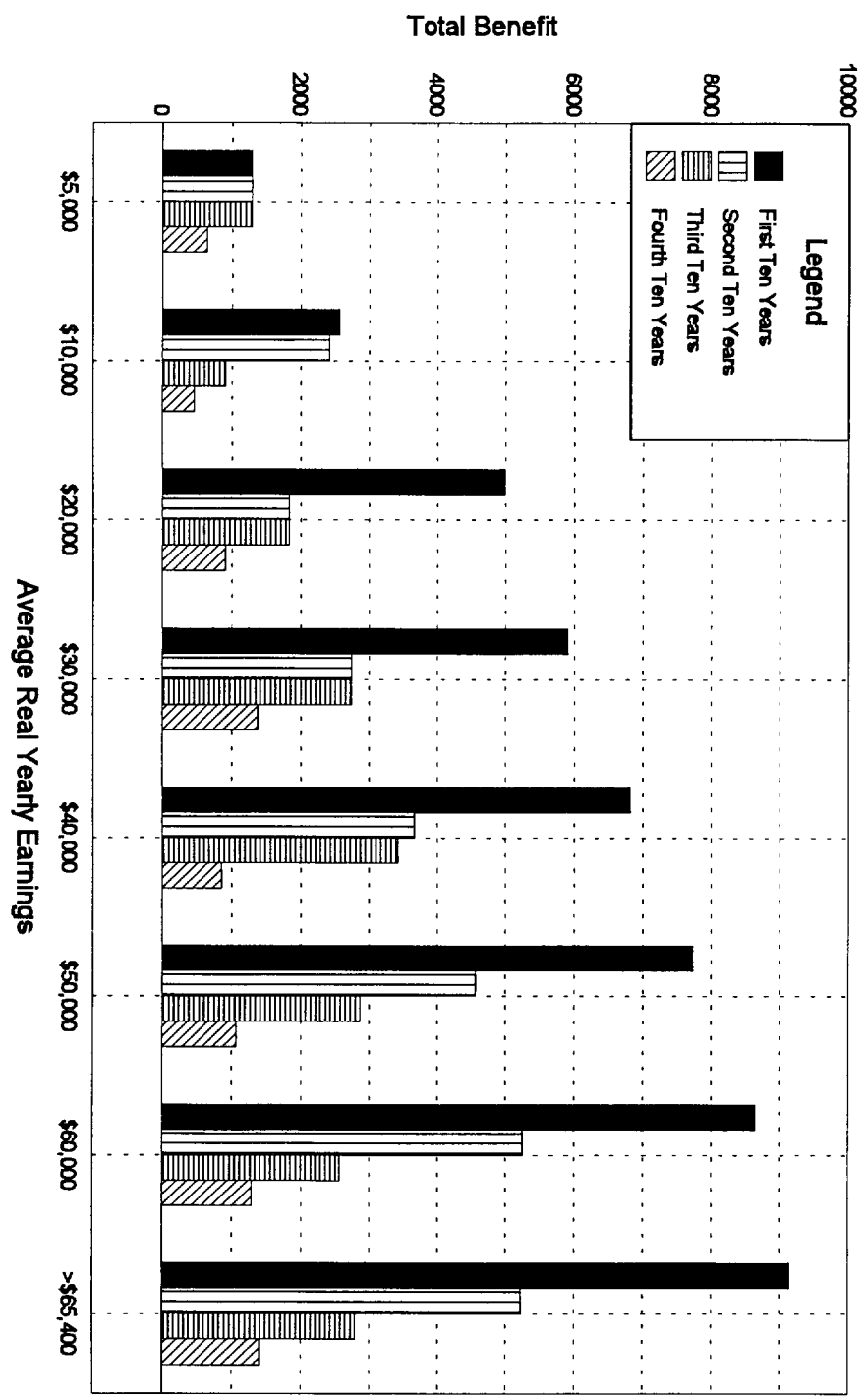


Figure 5

Ratio of Benefits: Foreign To U.S. Born

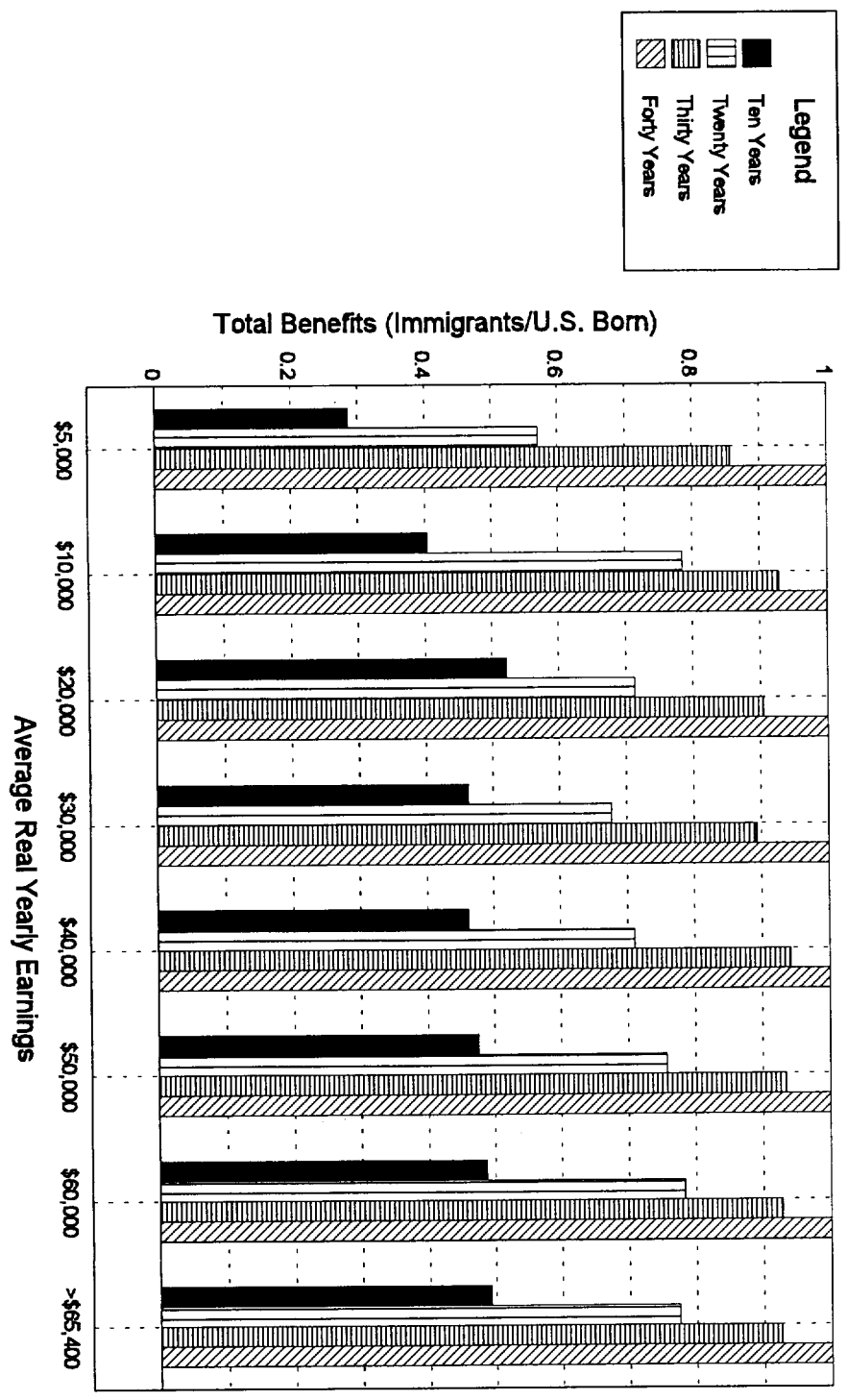


Figure 6: Ratio of Benefit/Cost Ratios

Foreign Born Over U.S. Born

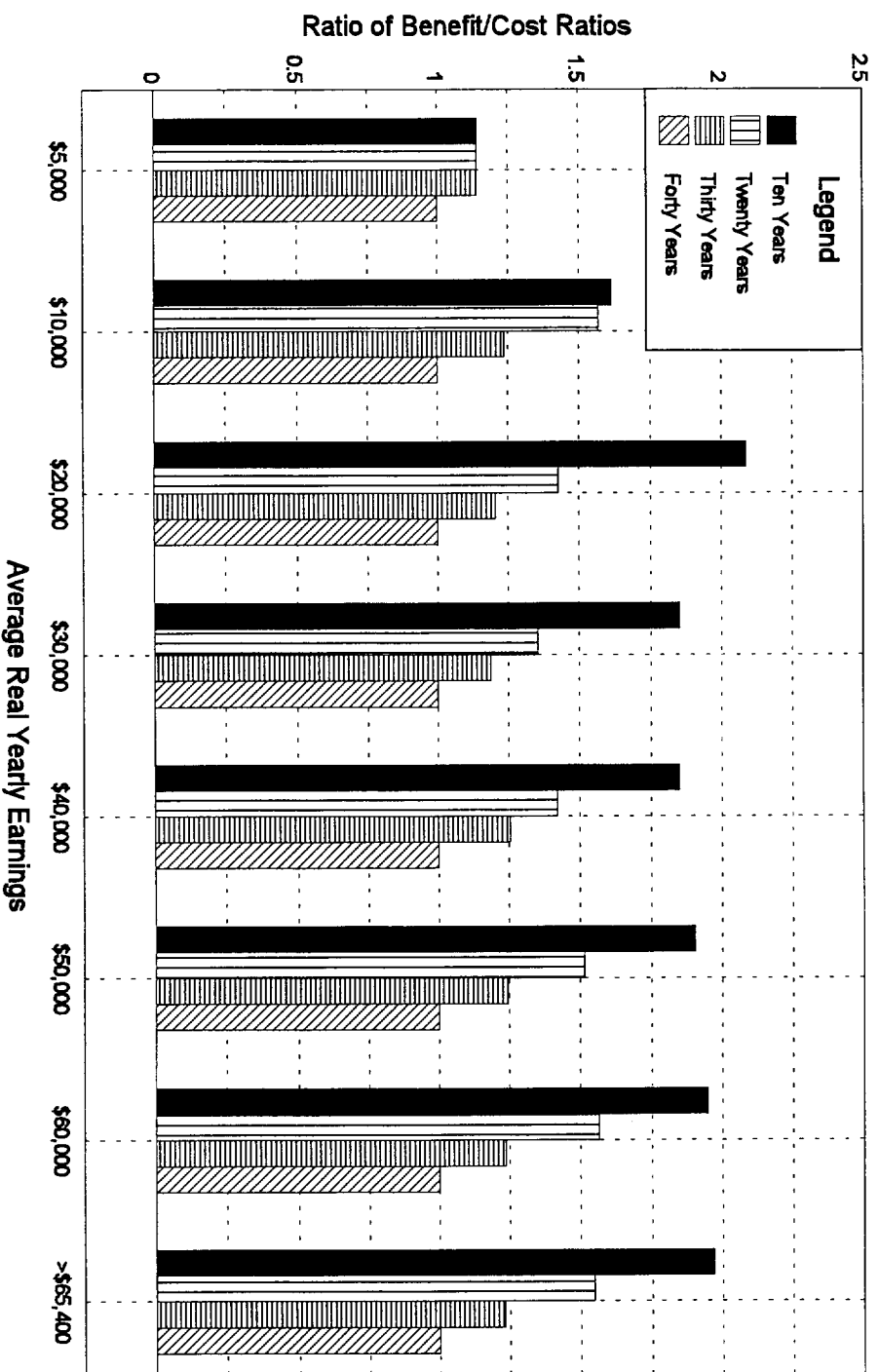
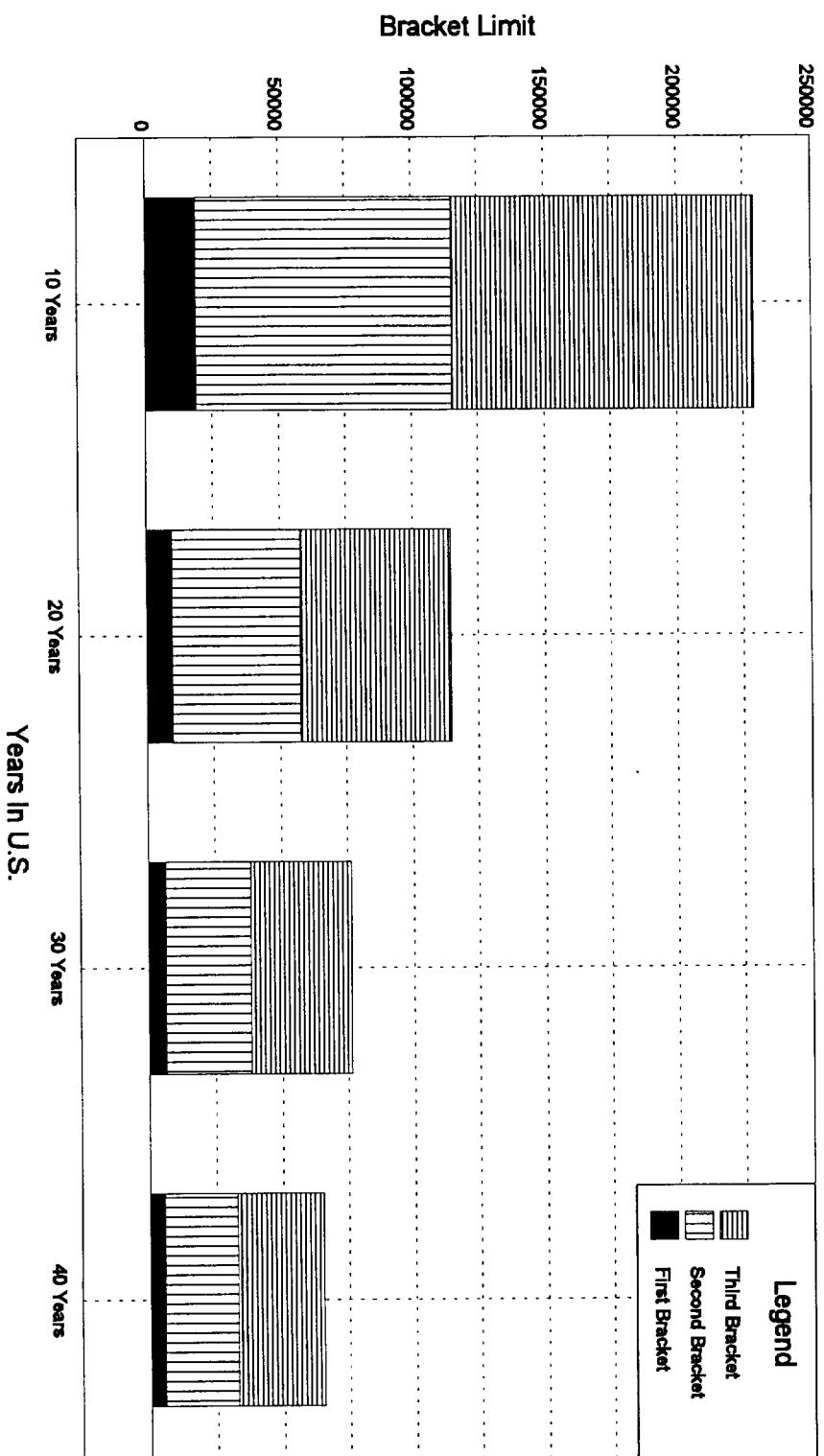


Figure 1

Bracket Amounts By Years In U.S.



**Figure 2. Fraction of All Foreign Born Who Entered
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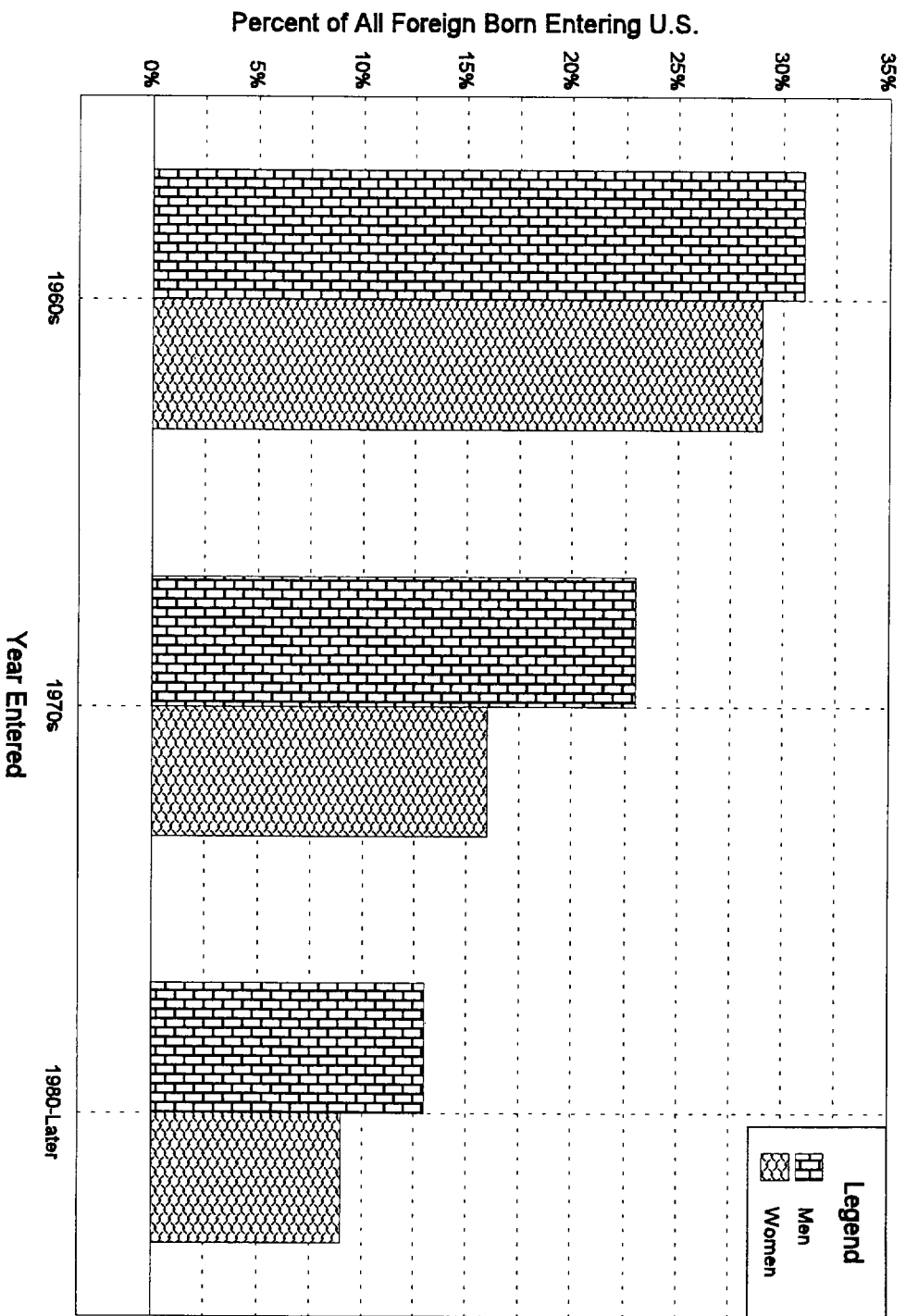


Figure 3

SS Benefit By Decades of Coverage and Real Yearly Earnings

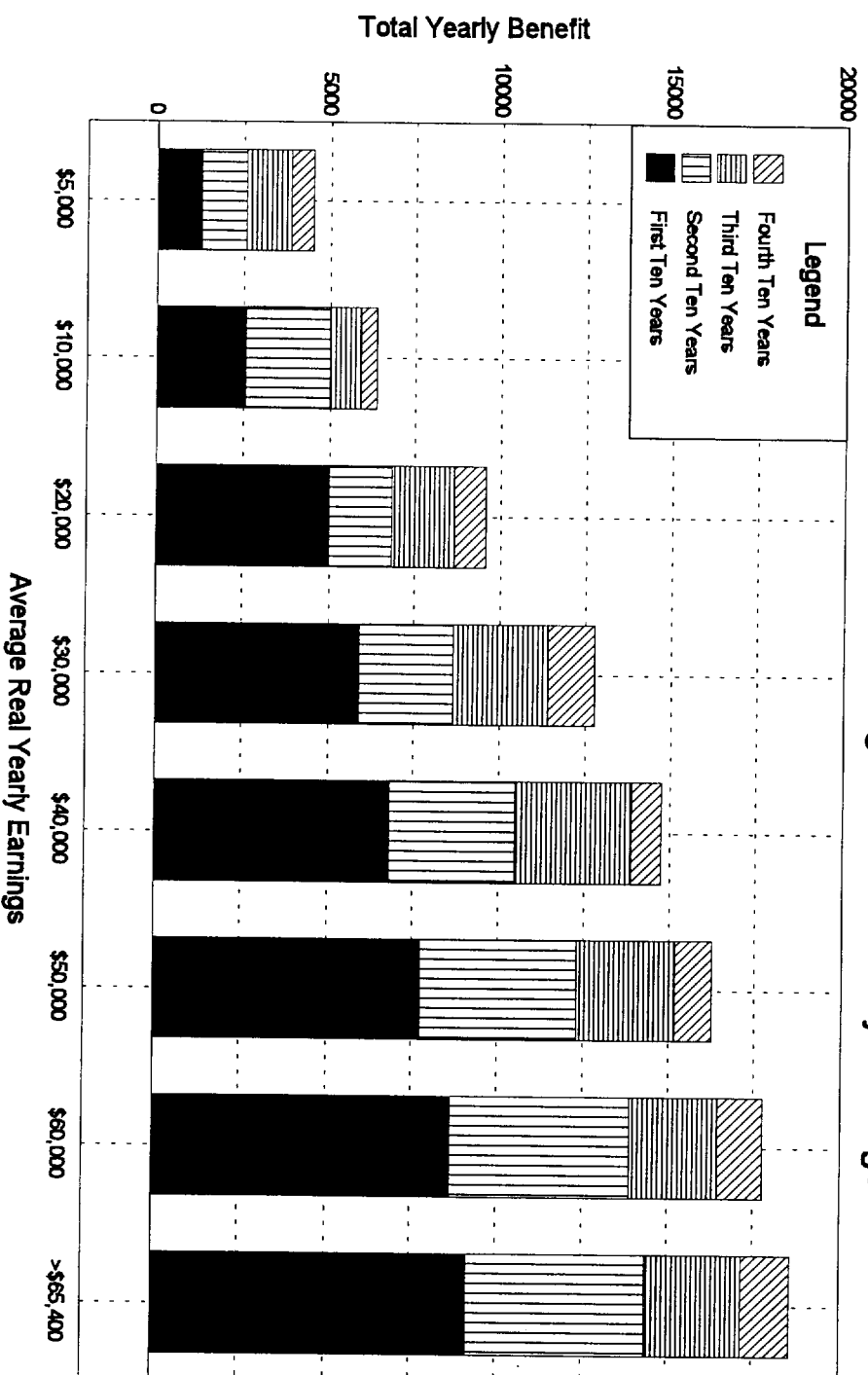


Figure 4

SS From Additional Coverage

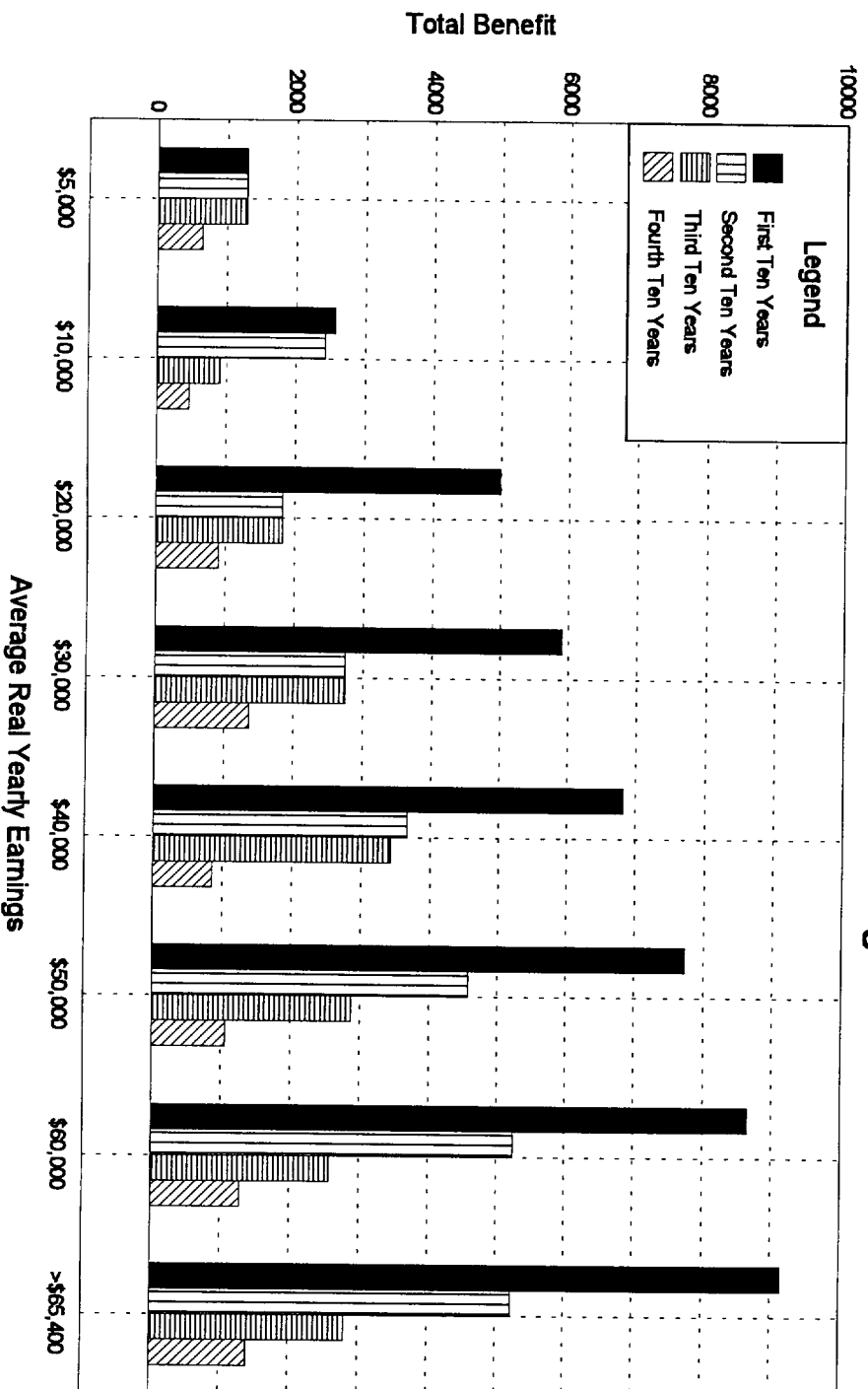


Figure 5

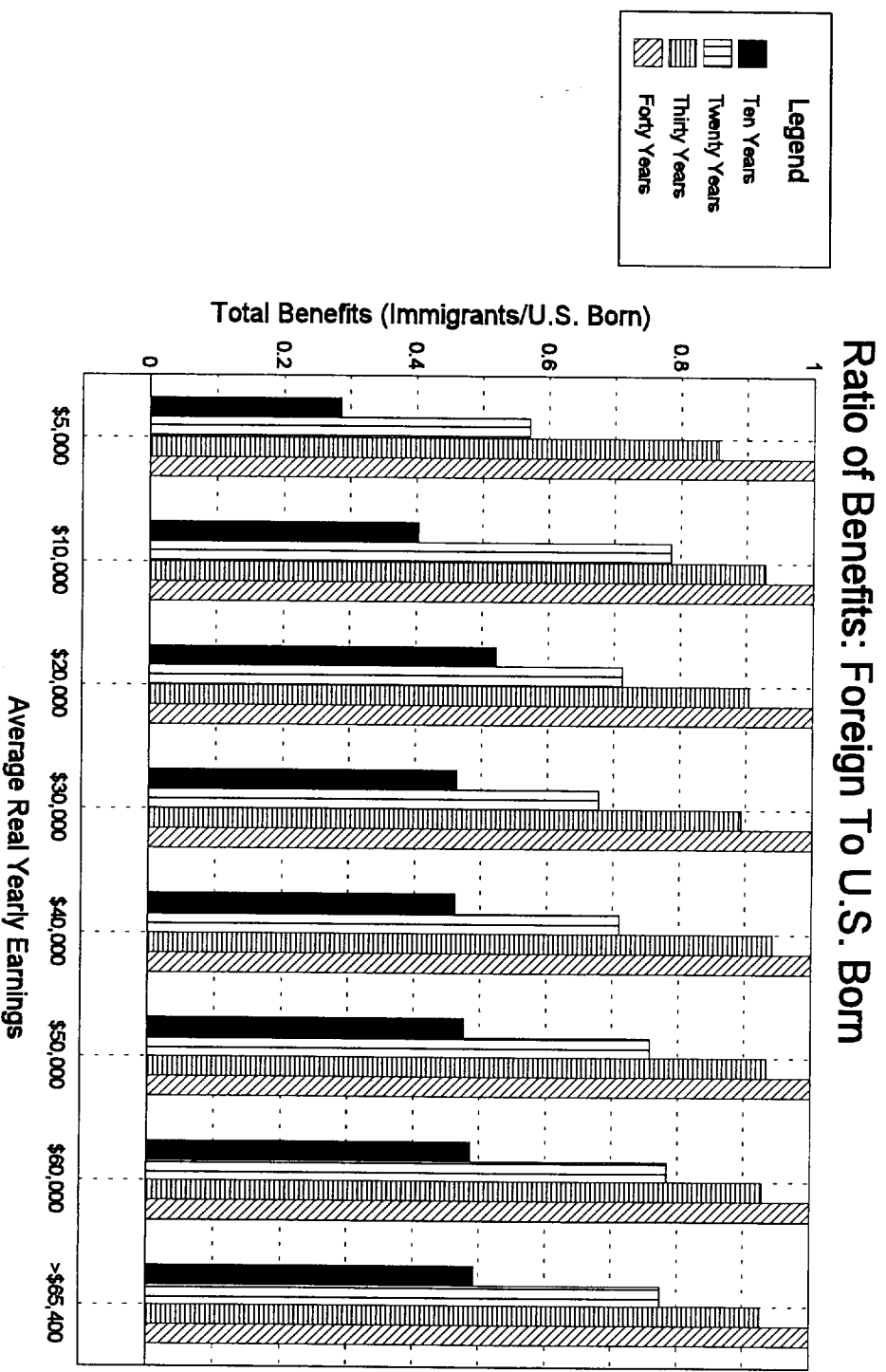


Figure 6: Ratio of Benefit/Cost Ratios

Foreign Born Over U.S. Born

