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Social Security Benefits?**

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June 2010

# **The Retirement Policy Program**

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*A crosscutting team of Urban Institute experts in Social Security, labor markets, savings behavior, tax and budget policy, and microsimulation modeling ponder the aging of American society.*

The aging of America raises many questions about what's in store for future and current retirees and whether society can sustain current systems that support the retired population. Who will prosper? Who won't? Many good things are happening too, like longer life and better health. Although much of the baby boom generation will be better off than those retiring today, many face uncertain prospects. Especially vulnerable are divorced women, single mothers, never-married men, high school dropouts, and Hispanics. Even Social Security—which tends to equalize the distribution of retirement income by paying low-income people more than they put in and wealthier contributors less—may not make them financially secure.

Uncertainty about whether workers today are saving enough for retirement further complicates the outlook. New trends in employment, employer-sponsored pensions, and health insurance influence retirement decisions and financial security at older ages. And, the sheer number of reform proposals, such as personal retirement accounts to augment traditional Social Security or changes in the Medicare eligibility age, makes solid analyses imperative.

Urban Institute researchers assess how current retirement policies, demographic trends, and private sector practices influence older Americans' security and decision-making. Numerous studies and reports provide objective, nonpartisan guidance for policymakers.

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## ABSTRACT

We use data from the Health and Retirement Study linked to administrative data on earnings and benefits to determine why some workers end up with low Social Security benefits in retirement. Several characteristics are associated with family benefits of less than poverty. Racial disparities are pronounced. Women's risk is marked, especially for unmarried women, with caregiving an important contributor to low-benefit risk. Less-educated workers are also vulnerable, sometimes even when they have worked long careers. Workers with health problems and disabled workers—especially those disabled early in the career—are comparatively likely to have family benefits of less than poverty.

## Introduction

As analysts and policymakers evaluate the relative merits of different proposals to close Social Security's long-term funding gap, it's important to understand why some older Americans end up with low Social Security retirement benefits. Many Social Security proposals aim to shore up benefits for low-income seniors as part of a comprehensive reform strategy (see, for example, National Academy of Social Insurance 2009). Proposals that are grounded in up-to-date information about who the current system fails to shield from poverty or near poverty—and how factors associated with low-benefit risk are likely to change in coming decades—are more likely to reach their goal of reducing beneficiary need in retirement. Given that the current recession has imposed tremendous economic hardships on many American families and has strapped government budgets at all levels, Congress faces great pressure to target Social Security resources efficiently.

This paper identifies the characteristics of Social Security beneficiaries age 64 to 73 with family benefits of less than poverty in 2003.<sup>1</sup> We identify factors associated with low benefits and provide data on how they are changing and what this implies for future Social Security adequacy. Finally, we discuss the findings in the context of various policy proposals designed to shore up Social Security for the most vulnerable workers.

We find a number of characteristics associated with family benefits of less than poverty. Racial disparities are very pronounced. Women's risk is marked, especially for those who are unmarried, with caregiving an important contributor to low-benefit risk. Less-educated workers are also very vulnerable, sometimes even when they have worked long careers. Workers with health problems and disabled workers—especially those disabled early in the career—are comparatively likely to have family benefits of less than poverty.

## How Social Security Works

In return for payroll tax contributions, Social Security provides inflation-protected benefits for retired and disabled workers and their dependents and survivors. Benefit levels depend on a multitude of factors. Retirement benefits are based on the highest 35 years of a worker's Social Security covered earnings,<sup>2</sup> while benefits for survivors and disabled workers can be based on fewer years for workers who die or become disabled early in their careers. When computing benefits, covered earnings are capped at the taxable maximum (the point after which neither workers nor employers contribute payroll tax on earnings, set at \$106,800 annually in 2010), averaged over 35 years, and then replaced using a progressive formula.<sup>3</sup> Workers who first claim their benefits early receive actuarial reductions (with benefits reduced by between 20 and 30 percent at age 62 depending on birth cohort), while those who first claim benefits after the full

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<sup>1</sup> Our goals are purely descriptive, rather than causal.

<sup>2</sup> In 2007, about 94 percent of all jobs were covered by Social Security, compared with 82.5 percent covered in 1955 (Committee on Ways and Means 2004, 2008). Today, most workers not covered by Social Security work for state and local governments. Other uncovered groups include federal workers hired prior to 1984, students working at their college or university, election workers, certain members of the clergy and religious orders, and low-earning domestic workers.

<sup>3</sup> For details on the calculation of Social Security benefits, see, for example, Social Security Administration (2009a).

retirement age receive delayed retirement credits (of 8 percent per year for those reaching age 62 in 2005 and later). The decision of when to claim Social Security benefits is a complex one, with women on average claiming earlier than men (Munnell and Soto 2005). Benefits for disabled workers are not reduced for early claiming, given disability's involuntary nature.

Widow(er)s are eligible for a benefit equal to their deceased spouse's full benefit after he or she dies. People with lower earnings than their spouses can often receive benefits equal to half of their spouse's benefit (while the spouse is still alive).<sup>4</sup> Like retired worker benefits, both spouse and survivor benefits are also reduced when beneficiaries claim early.

Social Security applies a retirement earnings test (RET) to those at or younger than the full retirement age. Under the RET, Social Security benefits of working beneficiaries with earnings above a threshold—\$14,160 annually for those under the full retirement age in 2010—are withheld, but subsequently repaid later in retirement through an adjustment to the actuarial reduction. Social Security benefits are subject to personal income tax for higher-income beneficiaries.

### **Historical Patterns in Social Security Benefits**

Social Security has substantially reduced need among older Americans. As late as 1959, the aged poverty rate approached 35 percent. In 2008, 9.7 percent of persons age 65 and older were poor (DeNavas-Walt, Proctor, and Smith 2009).<sup>5</sup>

The poverty level adjusts with prices and initial Social Security benefits with wages. Average Social Security benefits have increased relative to poverty over the past 35 years because wages have grown about one percent faster than prices each year (figure 1).<sup>6</sup> By 1982, the average retired worker benefit for a man reached the poverty threshold for an individual, and today men's retired worker benefits average 1.4 times the individual poverty threshold.<sup>7</sup> Women's retired worker benefits have also grown relative to poverty, although women's average benefit reached

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<sup>4</sup> A marriage must have lasted at least 10 years to qualify for a spouse or survivor benefit.

<sup>5</sup> Percentages with incomes below the poverty level are typically lower for Social Security beneficiaries than for the population more broadly. For example, in 2006 7.5 percent of beneficiaries 65 and older had incomes below the poverty level, compared to 21.6 for non-beneficiaries (Social Security Administration 2009b, table 11.1).

<sup>6</sup> Prior to 1977, Congress adjusted Social Security benefits after award in relatively *ad hoc* ways. The upward blip in benefits that occurred for all groups in 2009 results from technical differences in the ways that Social Security benefits and poverty levels account for inflation. Social Security bases the cost-of-living adjustment on September-to-September price changes, while the poverty level adjusts with January-to-January price changes. Unusually large increases in fuel prices in the 3rd quarter of 2008 led to a Social Security COLA that significantly exceeded the increase in prices—and thus the poverty level—for the calendar year.

<sup>7</sup> These calculations use the non-aged poverty level set by the Census Bureau. Social Security pays retired worker benefits starting at age 62 and aged widow(er) benefits starting at age 60, but the aged poverty threshold does not apply until age 65. As a result, a significant fraction of Social Security's beneficiary population is non-aged by Census definitions. Also, because the official poverty threshold likely understates needs (Butrica, Murphy, and Zedlewski 2008, Citro and Michael 1995) and the non-aged level is higher than the aged level, using the non-aged level likely provides a more accurate estimate of older Americans with insufficient benefits. Further, because December benefits reflect the benefits that will be paid in the next calendar year, the year represented along the horizontal axis is the year in which the benefits are actually paid (evaluated with respect to the poverty level that same year).

the individual poverty threshold only in 2007. Benefits for nondisabled widow(er)s, who receive benefits based on a deceased spouse's earnings record, fall between the benefits for men and women receiving retired worker benefits. Disabled workers' benefits have consistently fallen below retired workers' benefits, both for men and for women over the past two decades.

These averages, however, mask important variability in benefits for retirees, nondisabled widow(er)s, and disabled workers (figure 2). In 2009, a maximum of 32.3 percent of retired workers and nondisabled widows received benefits that fell below the aged poverty level for an individual, and 35.6 percent received benefits that fell below the non-aged poverty level.<sup>8</sup> Disabled workers' benefits resemble the retired workers' and widows' distribution in the tails, but are lower in the middle of the distribution. About half of disabled workers have benefits that fall below the non-aged poverty level. This variability in Social Security benefits arises because workers have very diverse employment experiences, marriage histories, and make different benefit claiming choices.

## Data and Methods

Statistics derived from beneficiary data do not account for family status and can misstate need among workers with only partial careers under covered employment. To estimate the prevalence and correlates of low Social Security benefits in a family context, we use data from the Health and Retirement Study (HRS) matched to earnings and benefit records from administrative data.<sup>9</sup> The HRS is the premier dataset for understanding the resources of retirees and near retirees in the United States. Starting with a sample age 51 to 61 in 1992 (the 1931 to 1941 birth cohorts), the HRS follows respondents every two years.<sup>10</sup> HRS respondents were asked at several points (in 1992, 1998, and 2004) whether they would give permission to link their answers to administrative records on earnings (starting from 1951) and Social Security benefit receipt.<sup>11</sup> About 72 percent of our sample provided HRS with permission at least one time, a figure that declines markedly for families if we require both spouses in a couple to have an earnings or benefit record.

We use these administrative reports of Social Security benefit amounts wherever possible, as they are more reliable (and easier to adjust for partial year benefit receipt) than self-reported

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<sup>8</sup> Because the Social Security Administration reports these benefits in increments of \$50, we cannot make precise comparisons to the poverty levels. These estimates represent an upper bound for the fraction of beneficiaries in poverty.

<sup>9</sup> We use data that have been standardized by researchers at the RAND Corporation (version I of the RAND file) for most self-reported HRS variables (St. Clair et al. 2009).

<sup>10</sup> Refresher birth cohorts were added in 1998 and 2004.

<sup>11</sup> The specific administrative files we use are the Summary Earnings Record (SER), Detailed Earnings Record (DER), and Master Beneficiary Record (MBR). The fact that multiple matches to the administrative records were conducted complicates many of our analyses. For example, some individuals have partial earnings records (only through 1999). Where individuals have partial earnings histories, we fill the remainder of their earnings history with self-reported earnings to the extent possible.

amounts.<sup>12</sup> However, our analyses use self-reported benefit levels for those who did not grant permission to match their responses to their administrative records. Including these individuals whenever possible is important, as the literature suggests that nonmatched cases differ from matched cases in important ways (Haider and Solon 2000; Kapteyn et al. 2006).<sup>13</sup> Our validation analyses comparing self-reported benefits with administrative records for those with both types of data were fairly reassuring. Most respondents reported benefits within a reasonable range of the administrative benefits.

In our analysis on how Social Security benefits relate to one's work history, we restrict our sample to those respondents with an administrative earnings record. Sensitivity analyses, presented in the appendix, suggest that while our estimates' levels differ somewhat across various strategies for contending with missing data, results on the differences across groups tend to be qualitatively similar regardless of how we incorporate partially missing data in the analyses.<sup>14</sup>

Our core measure of Social Security benefit adequacy is the family benefit-to-poverty ratio.<sup>15</sup> As in figure 1, we adjust annualized benefits by using the non-aged poverty levels. This allows us to take into account couples' economies of scale (for example, the fact that two people can typically find housing and eat more cheaply than one). We use the poverty level for an individual for married HRS respondents when benefit data are completely missing for their spouses (for example, because the spouse is younger and not yet collecting Social Security benefits).<sup>16</sup> As this could lead us to overstate need in couples, we explore the severity of this limitation in sensitivity analyses (again, presented in the appendix). We also adjust Social Security amounts for those recipients whose annual benefits appear to be lower than those to which they are entitled for some transitory reason (for example, the worker began claiming benefits part way through the year or has earnings and so receives a temporarily reduced benefit as a result of the Retirement Earnings Test).

Our use of the annual Social Security benefit relative to the poverty threshold is relatively conservative in the sense that it answers the question of whether individuals would be at risk of poverty *if they had no other income*. Of course, Social Security is not meant to be the sole source of support for American workers in retirement. Gerontologists often refer to a "three-legged stool" of support from Social Security, private savings, and employer-provided pensions (DeWitt 1996). Some now refer to earnings as a leg of the stool, at least for earlier retirement

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<sup>12</sup> One specific advantage of administrative data is that they allow us to clearly determine the size of the respondent's Social Security benefit *before* any deductions for Medicare premiums, known to be more complicated to capture in survey data.

<sup>13</sup> For example, non-workers are overrepresented among those without a match to an earnings record.

<sup>14</sup> Our point estimates would differ, for example, if we had used only those cases with complete administrative data or we handled situations in which one spouse in a couple is a non-beneficiary in a different way. Although the absolute estimates differ, patterns are broadly qualitatively consistent (Appendix tables 1 and 2).

<sup>15</sup> We use the term "family" for convenience, while actually focusing on couples.

<sup>16</sup> For spouses who have reached the early eligibility age and for whom an earnings record is available, we impute a Social Security benefit effective that year (the benefit he or she would be eligible for if he or she were to claim) to those who have not yet claimed.

years. The majority of Social Security beneficiaries have at least some other income.<sup>17</sup> Nonetheless, Social Security makes up the preponderance of income for the most vulnerable beneficiaries (Social Security Administration 2010, table 9.B6). A poverty-level Social Security benefit represents a reasonable benchmark for benefit adequacy, though many alternative benchmarks are possible (including, for example, a wage-indexed “relative” benefit-to-poverty ratio or a threshold set at a higher multiple of the poverty level, say 125 percent of it).

These analyses focus on individuals who were age 64 to 73 in 2004 (i.e., members of the 1931 to 1940 birth cohorts) and use 2004 observations from the HRS for measuring key respondent characteristics, except for Social Security benefits which we measure using administrative data from 2003. Given rapid changes in women’s work histories over recent decades, as well as factors like the maturing of the Social Security system and transitions in benefit calculations (from Average Monthly Wage to Average Indexed Monthly Earnings), looking at the latest possible cohorts of beneficiaries for whom HRS data are available can help us to better understand how future benefit distributions are likely to evolve.<sup>18</sup> We exclude from the sample the youngest retired worker beneficiaries—those who reach 62 in 2003—given that so many more of them are partial-year beneficiaries or have younger spouses who are not yet receiving benefits. We similarly exclude non-beneficiaries (people who either never worked the required 40 covered quarters—or 10 years—to qualify for a Social Security benefit or never had a qualifying marriage to a worker who met this requirement). Sensitivity tests show the effects of including those who do qualify for benefits but have not yet opted to collect them in the study population.

We also exclude beneficiaries with at least five years of earnings in uncovered government employment, because they may appear to be needy when they are not.<sup>19</sup> These beneficiaries will likely receive the bulk of their retirement income from other sources. Congress instituted government pension offset and windfall elimination provision to avoid inappropriate subsidies to relatively well off workers who may appear to be poor (Brown and Weisbrenner 2008). Appendix table 1 describes the effect of this exclusion on the overall estimates. Those with shorter experiences in uncovered employment remain in our sample, but we identify them to better understand their effect on overall patterns. Our measure of noncovered work—the number

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<sup>17</sup> For example, in 2008 23.5 percent of aged beneficiary units had earnings, 43.4 percent had benefits from some other pension (e.g., government, private, railroad), and 56.6 percent had income from assets (Social Security Administration 2010, table 2.A2).

<sup>18</sup> Restricting the sample to younger retirees is also beneficial for accurately measuring lifetime earnings, as covered earnings information in the administrative records is less complete prior to 1951. (For years prior to 1951, we do use summary information from the Summary Earnings Record. This requires us to make several simplifying assumptions about the years in which the worked earned.) One potential concern with focusing on relatively young retired beneficiaries is that poverty risk tends to be higher among the oldest old. Benefits for these beneficiaries will be COLA-adjusted, so should at least keep on pace with poverty, absent family structure changes. Some of the beneficiaries will convert to higher benefits later in retirement (most typically, for a worker or spouse benefit to a survivor benefit), and this typically coincides with widowhood, which will change the relevant poverty metric for the family. Appendix table 1 displays patterns in benefits relative to poverty by age, though readers should bear in mind that some of the apparent effects of age may instead reflect differences by cohort (the maturing of the Social Security system so that more earnings are covered, changes in women’s work, and so forth).

<sup>19</sup> Uncovered employment is very different from having no earnings. Workers in uncovered employment will have earnings reported to the Internal Revenue Service for personal income tax purposes, but are not liable for Social Security payroll taxes on these earnings.

of years with earnings in uncovered employment since 1981—is imperfect (for example, it may miss individuals with substantial government employment prior to 1981), but relies on high-quality data from the Detailed Earnings Record and captures most members of our sample when they are in their prime age working years and unlikely to have fully retired (the oldest members of our sample were age 52 in 1981).<sup>20</sup>

Similarly, we exclude immigrants who arrived in the United States very late in adulthood (at least 20 year into adulthood), because they may receive retirement income based on earnings in their origin countries. Investigating coverage in foreign pension programs (for example through totalization agreements) is outside the scope of this brief (see Nuschler and Siskin 2010).

## **Factors Associated with Low Social Security Benefits**

The results show that low Social Security benefits are strongly related to individual characteristics and earnings histories. These associations suggest possible ways of shoring up Social Security as well as other policies that would help more low-wage, low-skilled workers achieve greater success in the labor market and greater security in retirement.

***Individual Characteristics.*** Overall, the estimated fraction of Americans ages 64 to 73 in 2003 with subpoverty family Social Security benefits was about 21 percent (table 1).<sup>21</sup> A number of demographic characteristics are strongly associated with the likelihood of having family Social Security benefits less than poverty at these ages. For example, women make up just over half of our overall sample, but make up nearly two-thirds of those with below-poverty benefits. About 16 percent of men have subpoverty benefits compared with 26 percent of women, a statistically significant difference.<sup>22</sup>

With each successive increase in educational category, the risk of having low Social Security benefits declines. About 37 percent of those with less than a high school education have a benefit of less than poverty, compared to about 19 percent for high school graduates and 12 percent of those with college or more.

Race and ethnicity are also strongly associated with a retiree’s likelihood of low benefit receipt. About 43 percent of non-Hispanic blacks and 44 percent of Hispanics have family benefits that

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<sup>20</sup> Job tenure is typically much longer in government positions, which represent the preponderance of uncovered positions, than in other economic sectors (Sabelhaus and Brady 2006; Smith, Favreault, Toder 2009). So observing an individual just before he or she reaches retirement age should be a reasonable proxy for some time in uncovered government employment.

<sup>21</sup> This percentage is markedly lower than figure 2 shows because we are considering how benefits relate to a family (rather than individual) poverty level. We are also looking at a more select age range (those age 64 to 73, rather than all beneficiaries). So these factors outweigh the fact that our HRS data reflect conditions in an earlier year and include additional beneficiary categories (most notably, spouse only beneficiaries, who comprised about 10 percent of women Social Security beneficiaries age 62 and older in 2008 and 6 percent of all beneficiaries age 60 and older).

<sup>22</sup> In tables 1, 2, and 4, within each category we test the significance of subgroup differences relative to a reference group, typically the largest subgroup in that category. Asterisks indicate that the subgroup mean differs from the reference group mean at a significance level of at least 5 percent.

do not alone lift their family from poverty.<sup>23</sup> The high rate of below-poverty benefits for Hispanics partially reflects differences in nativity and, more importantly, time in the United States work force, given that Hispanics are more likely to be foreign born than non-Hispanics. Indeed, when we look strictly at Hispanics who were born in the United States, the below-poverty benefit rate drops to 36 percent, while among Hispanics born outside the United States it reaches 53 percent. (Recall that we have excluded those immigrants with more than 20 adult years outside of the country from the sample.)

When we consider nativity directly (irrespective of Hispanicity), about 26 percent of those born outside the U.S. have family benefits of less than poverty, compared with 21 percent for the native born. Nearly a third (31 percent) of those with 10 to 19 years outside the United States have low Social Security benefits.

Those who report better health in 2003 are less likely to have low Social Security benefits than those in poorer health. About 17 percent of those who say that their health is excellent or very good have subpoverty benefits, compared with 20 percent of those in good health, 29 percent of those in fair health, and 36 percent of those who report poor health.

Nearly half (46 percent) of beneficiaries who have not been married at least once for at least 10 years—the minimum qualifying duration for Social Security spousal benefits in case of divorce—have low Social Security benefits, compared with just over a fifth (19 percent) of those who did. Current marital status reveals similar trends. Individuals not currently married have a much higher risk of low benefits than married beneficiaries (from 37 to 48 percent compared with 11 percent). Widow(er)s are somewhat less likely to have poverty benefits than those who never married or divorced (37 percent compared with 46 and 48 percent, respectively), but all three unmarried groups clearly face significant risk. Dividing up the divorced group by whether or not they had marriages meeting the 10-year duration requirement shows higher risk among those with shorter durations (53 percent compared with 47 percent).

Because the home is many families' single largest transferable asset, it provides a useful measure of their wealth. Homeowners are significantly less likely to have family Social Security benefits of less than poverty than those who do not (about 17 percent for homeowners, compared to 46 percent for those without any home equity). This underscores the fact that economic vulnerability is typically multidimensional: those at risk of low Social Security benefits are very often asset-poor as well.

***Employment Histories.*** When we examine the prevalence of subpoverty benefits by lifetime earnings, a number of additional factors closely associated with low Social Security benefits emerge (table 2). We present estimates using four separate definitions of work histories to illustrate the policy importance of the definition of what constitutes a work year.<sup>24</sup> The four definitions are the number of years with earnings reaching the follow thresholds: (1) any covered

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<sup>23</sup> Favreault and Mermin (2008) provide a detailed discussion of how differences in a wide array of economic and demographic processes contribute to these differences.

<sup>24</sup> In all cases, we consider only earnings in Social Security-covered employment, as only they count toward Social Security benefits.

earnings during the year; (2) at least 4 covered quarters of earnings;<sup>25</sup> (3) earnings equivalent to at least half-time, half year (520 hours) work at the minimum wage; and (4) earnings equivalent to at least half-time, half-year work (1,000 hours) at the minimum wage. This range of definitions covers definitions used in numerous policy proposals for a new minimum benefit.

Subpoverty benefit risk generally declines with work years using each definition, with the noteworthy exception of the group with fewer than ten work years. This group is comprised of spouse and survivor only beneficiaries (who qualify for benefits on the basis of a spouse's earnings rather than their own) and disabled workers with disability onset at a young age. On average these recipients qualify for higher benefits than those with more years of earnings. Focusing on the first definition and groups with 10 or more years of earnings shows that the risk of a less than poverty-level benefit drops from 38 percent for those with 10 to 14 work years to only 7 percent for those with 40 or more covered years.

The fourth definition shows the clearest relationship between years of earnings and benefit level. Only about 2 percent of those who worked 40 or more years with earnings equivalent to at least 1,000 hours at the minimum wage (\$7,250 per year today) have subpoverty benefits, compared with 13 percent for those with 30 to 34 years and 45 percent for those with 10 to 14 years. The two work-years measures with definitions that fall between these show intermediate results.

These findings suggest that although Social Security generally relates benefits to earnings histories, some significant disparities can arise between workers and low- or non-working spouses (especially those who are married to higher earning workers). While the majority of beneficiaries who worked fewer than 20 years using any of these definitions have family benefits greater than poverty, an important minority of those who worked for a full career at even our most stringent definition do not.<sup>26</sup>

***Long-Term Workers with Low Benefits.*** The group of beneficiaries with long work histories who still have low benefits is of special policy interest, so we explore their characteristics further (table 3).<sup>27</sup> Those with less education, and disproportionately people of color, comprise the predominant share of those with long work histories whose benefits do not bring them out of poverty. Nearly half (45 percent) of those who earned amounts equivalent to at least half-time, half-year work at the minimum wage (equivalent to about \$6,550 annually today) for 35 or more years without earning a poverty level benefit have less than a high school education. About 30 percent are African American. These long-term workers with low benefits are also about three times less likely than others to have had a marriage that lasted long enough to qualify them for Social Security spouse or survivor benefits. They are quite concentrated by

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<sup>25</sup> In 2010, a worker can earn one covered quarter for \$1,120 in covered earnings, and 4 covered quarters with \$4,480 in earnings. Earnings no longer have to be earned in separate calendar quarters for more than one to count toward insured status.

<sup>26</sup> While Social Security is designed to be progressive, some aspects of the program's progressivity (for example, the use of only 35 years of earnings in the benefit calculation, and spouse/survivor benefits that do not require additional payroll tax contributions) are not always well-targeted and exclude some needy long-term low-wage beneficiaries. See Favreault, Mermin, and Steuerle (2006) for further discussion.

<sup>27</sup> Sample sizes for this group are small, so we suggest cautious interpretation of these results.

occupation, with disproportionate shares having held service or operator positions or worked in farming, forestry, or fishing as their longest job.

***Caregiving, Uncovered Employment, and Claiming Histories.*** Given the relatively close tie between work years and the likelihood of inadequate Social Security benefits, we consider the effect that caregiving has on work histories and the probability of low Social Security benefit receipt (table 4). We use a relatively narrow definition of caregiving: whether a beneficiary did not have earnings at the same time that a child age 5 or younger was present in his or her home.<sup>28</sup> About 17 percent of those who never left the labor force to care for children have low benefits, compared with about a third of those who took off five or more years.<sup>29</sup>

Work in employment that Social Security does not cover is also strongly associated with low-benefit risk. While about 20 percent of those who did not have any uncovered employment had low benefits, about 39 percent of those with one to four uncovered years had low benefits. (We have excluded those with five or more years of uncovered employment since 1981 from our sample.)

Those who delay claiming their Social Security benefits are less likely to have subpoverty benefits than those who claim early. Nearly a quarter of those who claim at age 62 or earlier (for example, as widow(er)s at age 60 or 61) have family benefits below the poverty level, compared with 19 percent of those claiming at age 63 and 64 and 14 percent for those claiming at age 65 and older. This gradient is not surprising, given that Social Security applies actuarial reductions to those who claim their benefits before the full retirement age and delayed retirement credits to those who defer claiming until after the full retirement age. No doubt, important differences between those who choose to delay benefit claiming (for example, because they are well-educated and have a stimulating job they enjoy) and those who do not (for example, because health problems prevent them from continuing to work) also contribute to the higher average benefits for those deferring.

Beneficiaries who become severely disabled and collect Disability Insurance (DI) benefits are more likely to have benefits that are less than poverty than those who claim retirement benefits without ever needing to rely on DI (35 percent compared with 20 percent).<sup>30</sup> The earlier in the career that one becomes disabled, the stronger this effect (though the effects are only statistically different from the non-DI average for the two groups that received DI for at least five years). This is not surprising, given that those who are entitled to DI, especially earlier in the career, do

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<sup>28</sup> HRS information on children's ages is detailed, but gathered in inconsistent ways across waves of the survey and therefore complex to use. We have used information from all HRS waves to establish a "best guess" at the oldest (and, where applicable, youngest) children's birth years. The estimates may be less reliable in cases of respondents who have had multiple marriages or partnerships. We suspect that we have thus slightly overestimated the fraction with at least some care years.

<sup>29</sup> We differentiate between those who never had a year off because they never had a child and those who never had a career break because of known differences between those who had and never had children in these cohorts.

<sup>30</sup> Readers should bear in mind that these DI beneficiaries (and former DI beneficiaries who converted to retired workers at the full retirement age) are not representative of DI beneficiaries more broadly, as they include only those who survived through age 63 (or greater). DI beneficiaries have much higher mortality than the population at large, especially in the first few years after entitlement (Zayatz 2005).

not benefit from as many years of wage growth as retired workers and their dependents. Also, those who are entitled to DI very late in their careers avoid actuarial reductions to their benefits.

Social Security benefits are just one part of a larger system of public benefits in the US. Among the small fraction of beneficiaries that receive food stamp benefits (now delivered through the Supplemental Nutrition Assistance Program), over four-fifths report sub-poverty family Social Security benefits.

***Occupation and Industry.*** Workers who report that the occupation at which they worked the longest was a service job, farming, forestry or fisheries, or a handler position have markedly high rates of sub-poverty benefit receipt (table 5). Similarly, those whose industry on the longest job was agriculture, forest, or fisheries or personal services have notably high levels of sub-poverty benefit receipt.

### **Projected Trends in Risk Factors**

With the retirement of the baby boom, already under way, the Social Security beneficiary population will continue to change in coming decades.

Several of these changes should reduce the fraction reaching retirement with low Social Security benefits. For example, the older population has become more educated, and we expect this to continue and lead to higher real benefits. All else equal, we expect that Social Security benefits will continue to grow faster than the poverty level because of the program's wage indexing of initial benefits. Additionally, more women will reach retirement with more extensive work histories (Favreault and Steuerle 2008). Their benefits will thus be somewhat higher.<sup>31</sup>

Other changes could to some degree offset these trends. Declining marriage rates mean that fewer retirees will reach retirement with a spouse and the added financial protection this often confers. Social Security actuaries project that by 2025, the newly retired population will contain significantly more divorced and never married people, and fewer married people and widow(er)s, compared to our analysis period and to today.<sup>32</sup> High levels of immigration throughout the 1990s and early 2000s, coupled with changes in immigrants' characteristics, could also slow reductions in beneficiary poverty risk due to better education, wage growth, and women's work.<sup>33</sup> Programmatic changes—like the continued increase in the normal retirement age, which is effectively a cohort-specific across-the-board benefit cut for the nondisabled—will also erode

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<sup>31</sup> We expect the rate of growth in benefits due to increased work by women to be relatively modest, as most ever-married women without extensive work histories would have qualified for spouse or survivor benefits regardless of years worked.

<sup>32</sup> OACT projections for 2025 show 67.3 percent of those age 62 to 70 married, 14.9 percent divorced, 9.3 percent never married, and 8.5 percent widowed. In 2003, the comparable figures for these ages were 70 percent married, 10.7 percent divorced, 4.5 percent never married, and 15.0 percent widowed.

<sup>33</sup> Further research is needed on immigrants' effects of the future beneficiary population.

progress in poverty reduction, as could any benefit changes to address the program's financing deficit.<sup>34</sup> Working longer could help future beneficiaries to offset these types of reductions.

## Discussion and Policy Implications

Some workers with long-term low lifetime earnings (for example, those who worked over 30 years at earnings equivalent to at least half-time, half-year at the minimum wage) do not qualify for a Social Security benefit that would keep them out of poverty.<sup>35</sup> This important subgroup of at-risk beneficiaries clearly does not represent the majority of beneficiaries at risk of poverty—at most, they represent about a quarter of poverty-risk beneficiaries.<sup>36</sup>

To meet the needs of these long-term, low-wage workers, policymakers could adjust Social Security's bend points or replacement percentages, perhaps while adjusting for career length to maintain good work incentives, or create a new minimum benefit tied to work years. Some analysts have proposed adjustments to the special minimum benefit that exists under current law so that it provides a level of support greater than the poverty level (see, for example, Sullivan, Meschede, and Shapiro 2008). Special minimum provisions currently have very little effect, and the policy is expected to be completely irrelevant for new beneficiaries within a few years because some important parameters have not been indexed for wage growth (Feinstein 2000).

Intermittent work histories, including work interruptions for caregiving and unemployment, and relatively early labor force withdrawal are clearly bigger factors in explaining poverty risk among Social Security beneficiaries than long careers at low wages. Research shows that low-wage, less educated workers are far more vulnerable to unemployment and disability than others (Jacobsen and Mather 2010; Johnson, Favreault, and Mommaerts 2009). Labor market conditions for this group are far more precarious than they are for those entering the labor force with greater advantages.

A two-pronged approach that addresses both early life circumstances that lead to intermittent work histories coupled with Social Security enhancements would most effectively reduce retirement vulnerability for these groups. Work supports, such as subsidized child care and paid leave would increase parents' work continuity and investments in adult education and training could promote greater wage growth (Zedlewski, Chaudry, and Simms 2008; Holzer 2009). The earned income tax credit (EITC) can help draw low-wage workers into the labor force. Together, these policies could help low-wage workers to gain eligibility for higher Social Security benefits when they reach retirement.

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<sup>34</sup> Social Security's long-term deficit could lead to benefit reductions at some point in the future, compromising progress in reducing beneficiary need. The program's Trust Fund is expected to become insolvent in about 2037 (OASDI Board of Trustees 2009). At that point, about 76 percent of benefits would be payable assuming no payroll tax or benefit changes were made between now and then. While it is not likely that Social Security's long-term financing gap will be closed solely through benefit reductions, the possibility of a reduction of up to a quarter could markedly reduce well-being (and increase poverty risk) in retirement.

<sup>35</sup> To provide some context, even a lifetime of full-time, full-year minimum wage work yields a poverty level benefit only at the full retirement age.

<sup>36</sup> This fraction could conceivably grow in the future as more women enter retirement with longer work histories, but at relatively low wages, and without qualifying for spouse or survivor benefits.

Social Security enhancements to aid beneficiaries with these types of intermittent histories would include caregiver credits or a minimum benefit that integrated caregiving, unemployment, and/or disability credits (for example, Favreault 2009a). One rationale for implementing caregiver credits is that raising the next generation of workers is vital for our economy and Social Security's fiscal health, so Social Security should better recognize caregivers' contributions to the system, as many other countries' pension plans do (Fultz 2009; Herd 2009b). A caregiver benefit—rather than credits to the work history—based on the poverty threshold would be another possibility (Herd 2009a). More generous minimum benefits—even without caregiver adjustments—could also help this population assuming that their work requirements were not highly stringent (see, for example, Favreault, Mermin, and Steuerle 2006).<sup>37</sup>

When considering expanding minimums or other broad-based benefit expansions, however, program interactions must be considered (i.e., some SSI beneficiaries could lose their access to Medicaid if their Social Security benefits were to increase so that they exceed SSI eligibility standards).

Other analysts focus on other aspects of Social Security to improve benefit adequacy. For example, some propose shoring up benefits for widows (Burkhauser and Smeeding 1994; Entmacher 2008). Others would reduce the marriage duration requirement from 10 to 7 years or increase the replacement percentage for divorced spouses (Hartmann and Hill 1999; Weaver 1997). Still others argue that delays in Social Security benefit claiming could increase benefit adequacy.

Beefing up the social assistance safety net, particularly the Supplemental Security Income (SSI) program, also could be an appropriate place for addressing the needs of those with limited work histories.<sup>38</sup>

Given the diversity of factors and histories associated with low-benefit receipt, working on multiple fronts to shore up Social Security and SSI will likely be necessary to insure that the program continues to meet the needs of American families in the coming decades (Favreault 2009b). Many of the adequacy improvements could be accomplished with modest cost. Ideally any debate over Social Security's long-term financing will include proposals to increase benefit adequacy for the most vulnerable groups.

## References

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<sup>37</sup> Appendix figure 1 shows how several work-years thresholds relate to one another in real wage terms from 1951 through 2009. Favreault, Mermin, and Steuerle (2006) provide data on the requirements for minimum benefits in many legislative proposals. Some proposals require many years at relatively low earnings, while others ask for fewer years but at higher earnings. The most stringent measure in this paper require lower earnings than the work year requirements for minimum benefits in President's Commission proposals (2001).

<sup>38</sup> But using SSI certainly comes with trade-offs. The effectiveness in targeting resources to the most needy must be weighed against concerns about low take-up, poor work and savings incentives, and stigma that surround SSI. Some analysts have proposed developing a new program in between SSI and Social Security as an alternative, more universal approach to addressing the special needs of those with more limited work histories (for example Smeeding and Weaver 2001), though proposals of this nature have not recently appeared in any major legislative proposals.

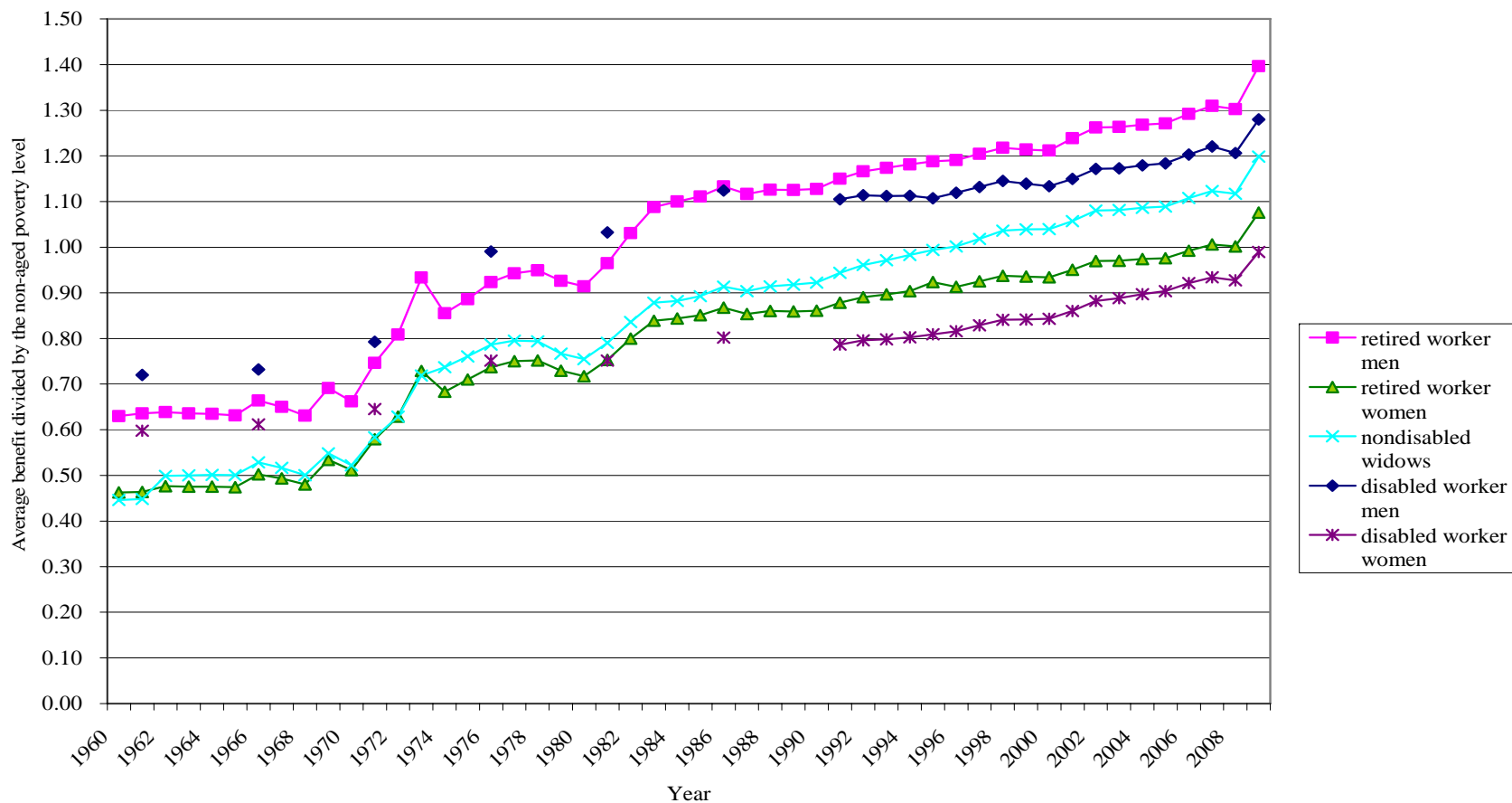
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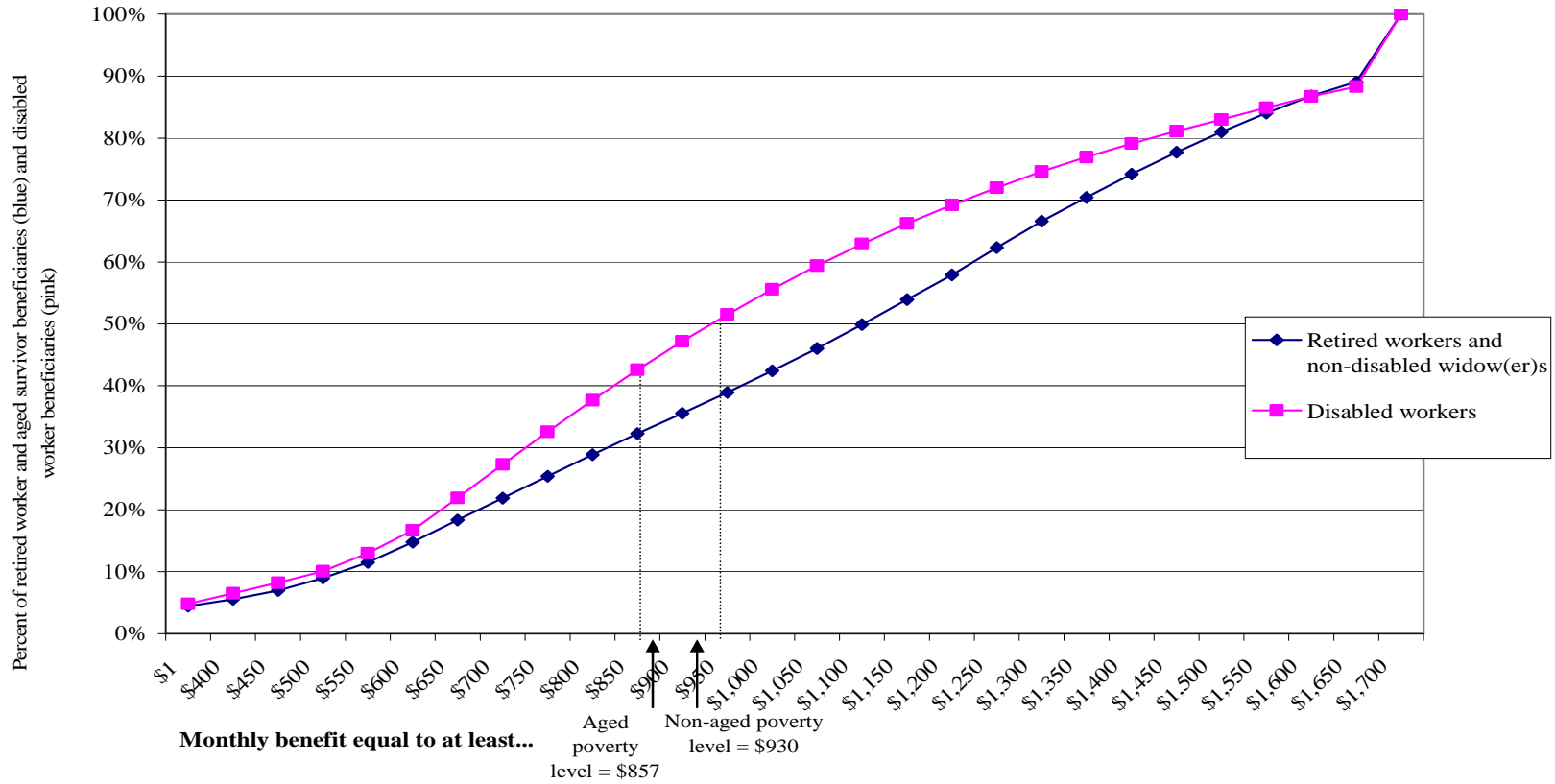
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**Figure 1. Average Social Security Benefits (December Benefit, Annualized) for Retired Workers, Non-Disabled Widows, and Disabled Workers Divided by the Non-Aged Poverty Level, 1960-2009**



*Source:* Author's calculations from Social Security Administration (2009), tables 5.C2, 5.F6 and U.S. Census Bureau (2010)  
*Notes:* Because December benefits reflect the benefits that will be paid in the next calendar year, the year represented along the horizontal axis is the year in which the benefits are actually paid (evaluated with respect to the poverty level that same year).

**Figure 2. Cumulative distribution of Social Security benefits (including benefits for retired workers and non-disabled widows), December 2008**



Source: Author's calculations from Social Security Administration (2009), tables 5.C2, 5.F6 and U.S. Census Bureau (2010)

Notes: Comparisons to Census poverty levels assume that December benefits are annualized. Because December benefits reflect the benefits that will be paid in the next calendar year, the poverty level we use is for 2009.

**Table 1. Demographic Characteristics, Including Low-Benefit Risk Factors, of Social Security Beneficiaries  
Ages 64 to 73 in 2003 by Family Benefit to Poverty Ratio**

Characteristics and low-benefit risk factors	Percent of beneficiaries			Percent of group with a sub-poverty benefit
	All	Benefit at or below poverty		
	(1)	(2)	(3)	(4)
<b>All</b>	100.0	100.0		21.4
<b>Gender</b>				
Men	45.9	33.9	*	15.8
Women	54.1	66.1	REF	26.1
<b>Education</b>				
Education less than high school graduate	21.4	37.3	*	37.2
High school graduate or GED	39.9	35.3	REF	18.9
GED	5.3	6.4	*	25.4
Some college	20.4	17.2	*	18.1
College graduate or more	18.3	10.2	*	11.8
<b>Race/ethnicity</b>				
Non-Hispanic white	85.2	71.0	REF	17.8
Non-Hispanic African-American	8.6	17.4	*	43.2
Hispanic, any race	4.7	9.6	*	44.0
Native born Hispanic	2.5	4.4	*	36.4
Foreign-born Hispanic	2.1	5.2	*	52.8
<b>Nativity</b>				
Native born	93.2	91.7	REF	21.0
Foreign born	6.8	8.2	*	26.1
Came to the U.S. at age 17 or earlier	1.3	1.5		24.7
1 to 9 adult years outside U.S.	2.7	2.7		21.3
10 to 19 adult years outside U.S.	2.5	3.6	*	31.3
<b>Health status (current)</b>				
Reports excellent health (current)	11.0	8.7	*	17.0
Reports very good health (current)	29.1	22.0	*	16.2
Reports good health (current)	33.1	30.4	REF	19.6
Reports fair health (current)	19.0	25.4	*	28.5
Reports poor health (current)	7.9	13.5	*	36.4
<b>Marital history</b>				
At least one marriage that lasted at least 10 years	92.9	84.6	REF	19.4
No marriage that lasted at least 10 years	7.1	15.4	*	46.2
No marriage of at least 10 years, have at least one child	3.6	8.2	*	48.4
<b>Marital status (current)</b>				
Married	67.3	35.5	REF	11.3
Widowed	16.1	28.1	*	37.4
Never married	3.1	6.8	*	46.4
Divorced or separated	10.9	24.5	*	48.1
Divorced, longest marriage >= 10 years	8.9	19.6	*	47.1
Divorced, longest marriage < 10 years	1.9	4.8	*	53.0
<b>Homeowner status</b>				
Owens home	83.8	65.4	REF	16.7
Rents or shares home	16.2	34.6	*	45.5
<i>N</i>	5,915	1,263		

**Source:** Author's estimates from Health and Retirement Study matched to Summary Earnings Record, Detailed Earnings File and Master Beneficiary Record.

**Sample:** We exclude workers with at least 5 years uncovered employment since 1981 and immigrants who spent 20 or more adult years outside of the United States. Estimates are weighted using HRS respondent weight for 2004.

**Notes:** Estimated Social Security benefits rely on self-reported data for those without SER match. For married people, we combine own and spouse benefit when both are beneficiaries and information is non-missing and compare to the poverty threshold for a couple. For age-eligible spouse non-claimants with earnings histories, we compute the benefit to which he/she would be entitled if claiming this year. If the spouse is has missing information, then we compare to the poverty level for an individual. For partial year beneficiaries (due to mid-year claiming or effects of the Retirement Earnings Test), we fill in zero months with an estimated benefit based on months in which full benefit was paid. Social Security benefits for family members other than a spouse are not included. Percentages may not sum to 100 due to rounding.

"\*" indicates that the mean in column 2 for the row differs significantly from the mean for the reference group (designated by "REF"), typically the mode, at at least the  $p < 0.05$  level.

**Table 2. Work Histories (through Age 62) of Social Security Beneficiaries Ages 64 to 73 in 2003 by Family Benefit to Poverty Ratio**

Characteristics and low-benefit risk factors	Percent of beneficiaries			Percent of group with a sub-poverty benefit
	All	Benefit at or below poverty	(3)	
	(1)	(2)	(3)	(4)
<b>Covered work history through age 62 (inclusive)</b>				
Number of years with any covered earnings				
< 10 years	6.1	9.9	*	34.2
10 - 14 years	3.9	7.2	*	37.9
15 - 19 years	6.5	12.0	*	39.1
20 - 24 years	7.9	15.0	*	39.6
25 - 29 years	8.1	10.8	*	28.1
30 - 34 years	12.2	17.5	*	30.1
35 - 39 years	14.7	13.3	*	19.1
40 or more years	40.6	14.3	REF	7.4
Number of years with at least 4 covered quarters of earnings				
< 10 years	9.1	14.3	*	33.1
10 - 14 years	5.5	11.7	*	44.4
15 - 19 years	7.3	13.7	*	39.5
20 - 24 years	7.9	13.5	*	35.5
25 - 29 years	9.8	16.6	*	35.7
30 - 34 years	11.7	12.6	*	22.6
35 - 39 years	15.1	10.5	*	14.6
40 or more years	33.5	7.1	REF	4.5
Number of years with covered earnings equivalent to at least half-time, half-year work (520 hours) at prevailing federal minimum wage				
< 10 years	11.1	19.0	*	36.1
10 - 14 years	6.4	13.3	*	43.6
15 - 19 years	7.3	13.0	*	37.3
20 - 24 years	8.5	14.6	*	36.3
25 - 29 years	10.3	15.2	*	31.0
30 - 34 years	11.6	12.4	*	22.4
35 - 39 years	16.2	7.0	*	9.1
40 or more years	28.6	5.3	REF	3.9
Number of years with covered earnings equivalent to at least half-time, half-year work (1000 hours) at prevailing federal minimum wage				
< 10 years	15.4	28.0	*	38.2
10 - 14 years	7.1	15.2	*	45.1
15 - 19 years	7.8	14.5	*	38.9
20 - 24 years	9.8	14.9	*	31.8
25 - 29 years	9.8	12.9	*	27.6
30 - 34 years	11.5	6.9	*	12.6
35 - 39 years	16.2	5.0	*	6.5
40 or more years	22.4	2.6	REF	2.4
<i>N with earnings history match</i>	4,956	1,040		21.0

Source: Author's estimates from Health and Retirement Study matched to Summary Earnings Record, Detailed Earnings File and Master Beneficiary Record.

Sample: We exclude workers with at least 5 years uncovered employment since 1981 and immigrants who spent 20 or more adult years outside of the United States. Estimates are weighted using HRS respondent weight for 2004.

Notes: Estimated Social Security benefits rely on self-reported data for those without SER match. For married people, we combine own and spouse benefit when both are beneficiaries and information is non-missing and compare to the poverty threshold for a couple. For age-eligible spouse non-claimants with earnings histories, we compute the benefit to which he/she would be entitled if claiming this year. If the spouse is has missing information, then we compare to the poverty level for an individual. For partial year beneficiaries (due to mid-year claiming or effects of the Retirement Earnings Test), we fill in zero months with an estimated benefit based on months in which full benefit was paid. Social Security benefits for family members other than a spouse are not included. Percentages may not sum to 100 due to rounding.

"\*" indicates that the mean in column 2 for the row differs significantly from the mean for the reference group (designated by "REF"), typically the mode, at at least the  $p < 0.05$  level.

**Table 3. Characteristics of Social Security Beneficiaries Ages 64 to 73 in 2003 with Family Benefits of less than Poverty with Earnings Equal to at least Half-Time, Half-Year (520 Hours) at the Federal Minimum Wage for at least 35 Years**

	Percent of beneficiaries	
	All	Poverty benefits despite long work histories
<b>Demographic characteristics</b>		
Men	45.9	51.5
Women	54.1	48.5
Education less than high school graduate	21.4	44.9
High school graduate or GED	39.9	33.8
Some college	20.4	13.2
College graduate or more	18.3	8.1
College graduate	9.0	5.1
Graduate or professional school	11.3	2.9
Non-Hispanic white	85.2	58.8
Non-Hispanic African-American	8.6	30.1
Hispanic, any race	4.7	11.0
Native born	93.2	96.3
Foreign born	6.8	3.7
At least one marriage that lasted at least 10 years	92.9	77.2
No marriage that lasted at least 10 years	7.1	22.8
<b>Occupation on longest job</b>		
Professional/managerial	30.7	16.6
Sales	9.4	6.8
Clerical/administrative	17.1	12.8
Services	13.0	20.3
Farming/forestry/fishing	2.8	7.5
Mechanics	3.6	3.0
Construction trade/extractors	3.5	3.0
Precision production	4.2	3.0
Operators	14.4	26.3
Armed forces	1.3	0.8
<i>N for estimates of all beneficiaries</i>	5,915	--
<i>N (Low benefit must have SER match)</i>	4,956	136

**Source:** Author's estimates from Health and Retirement Study matched to Summary Earnings Record, Detailed Earnings File and Master Beneficiary Record.

**Sample:** We exclude workers with at least 5 years uncovered employment since 1981 and immigrants who spent 20 or more adult years outside of the United States. Estimates are weighted using HRS respondent weight for 2004.

**Notes:** Percentages may not sum to 100 due to rounding.

**Table 4. Caregiving, Uncovered Work, and Benefit Claiming Histories of Social Security Beneficiaries Ages 64 to 73 in 2003 by Family Benefit to Poverty Ratio**

Characteristics and low-benefit risk factors	Percent of beneficiaries			Percent of group with a sub-poverty benefit
	All	Benefit at or below poverty		
	(1)	(2)	(3)	(4)
<b>Caregiving work history through age 62 (inclusive)</b>				
Number of years with no earnings while had a child younger than age 5				
None	50.9	40.0	REF	16.5
Had at least one child, but no zero earnings years	43.8	27.9	*	13.4
Never had a child	5.7	9.6	*	35.6
1 to 4	25.4	23.1	*	19.1
5 to 9	18.5	29.3	*	33.3
10 or more	5.2	7.6	*	30.6
<b>Uncovered employment history</b>				
Number of years since 1981 with any uncovered employment				
None	95.4	91.5	REF	20.1
1 to 4	4.6	8.5	*	39.2
<b>Benefit claiming history</b>				
Claimed Social Security at age 62 or earlier	63.6	72.0	REF	24.2
Claimed Social Security at age 63-64	18.4	16.6		19.3
Claimed Social Security at age 65 or older	18.0	11.4	*	13.5
Never received DI benefits	89.1	82.1	REF	19.7
Ever received DI benefits	10.8	17.7	*	35.1
Received DI for 1-4 years	0.8	0.8		22.0
Received DI for 5-9 years	2.6	4.3	*	34.6
Received DI for at least 10 years	5.9	10.0	*	36.0
In a household that receives Food Stamps	3.8	14.9	*	83.9
No one in the household receives Food Stamps	96.2	85.1	REF	18.9
<i>Overall N</i>	5,915	1,263		21.4
<i>N with earnings history match (applies to covered work)</i>	4,956	1,040		21.0

Source: Author's estimates from Health and Retirement Study matched to Summary Earnings Record, Detailed Earnings File and Master Beneficiary Record.

Sample: We exclude workers with at least 5 years uncovered employment since 1981 and immigrants who spent 20 or more adult years outside of the United States. Estimates are weighted using HRS respondent weight for 2004.

Notes: Estimated Social Security benefits rely on self-reported data for those without SER match. For married people, we combine own and spouse benefit when both are beneficiaries and information is non-missing and compare to the poverty threshold for a couple. For age-eligible spouse non-claimants with earnings histories, we compute the compare to the poverty level for an individual. For partial year beneficiaries (due to mid-year claiming or effects of the Retirement Earnings Test), we fill in zero months with an estimated benefit based on months in which full benefit was paid. Social Security benefits for family members other than a spouse are not included. Percentages may not sum to 100 due to rounding.

"\*" indicates that the mean in column 2 for the row differs significantly from the mean for the reference group (designated by "REF"), typically the mode, at at least the  $p < 0.05$  level.

**Table 5. Social Security Benefit to Poverty Ratio, by Occupation and Industry on Longest Job, Among Beneficiaries Ages 64 to 73 in 2003**

Characteristics and low-benefit risk factors	Percent of beneficiaries			Percent of group with a sub-poverty benefit
	All	Benefit at or below poverty		
	(1)	(2)	(3)	(4)
<b>Occupation on longest job</b>				
Managerial	14.9	7.4	*	10.6
Professional specialty or technical support	15.8	10.7	*	14.4
Sales	9.4	10.2		23.2
Clerical/administrative support	17.1	14.7	REF	18.3
Services: private household, cleaning, building services	1.1	2.6	*	50.9
Services: protection	1.7	3.4	*	43.3
Services: food preparation	3.0	6.4	*	44.4
Health services	2.0	4.1	*	42.6
Personal services	5.1	9.6	*	40.1
Farming/forestry/fishing	2.8	5.9	*	44.4
Mechanics/repair	3.6	2.2	*	13.0
Construction trade/extractors	3.5	3.8		23.0
Precision production	4.2	2.3	*	11.7
Operators: machine	7.6	8.1	*	22.5
Operators: transport	4.3	2.8		14.0
Operators: handlers, etc	2.5	4.3	*	36.8
Armed forces	1.3	1.3	*	22.4
Missing occupation data	10.1	10.4	*	21.7
<b>Industry on longest job</b>				
Agriculture/forest/fisheries	3.1	5.8	*	40.1
Mining and construction	6.5	6.6		21.5
Manufacturing: nondurable	8.3	7.4		19.0
Manufacturing: durables	12.7	6.2	*	10.4
Transportation	7.4	4.8	*	13.8
Wholesale	3.5	1.9	*	11.9
Retail	11.4	14.6		27.1
Finance/insurance/real estate	6.2	4.6	*	15.6
Business/repair services	4.6	5.7		26.0
Personal services	4.6	9.4	*	43.3
Entertainment/recreation	1.1	1.2		23.3
Professional/related services	24.8	24.0	REF	20.5
Public administration	5.9	7.9		28.4
Missing industry data	10.4	10.8		22.1
N (occupation, non-missing)	5,325	1,131		21.2
N (industry, non-missing)	5,309	1,126		21.2

**Source:** Author's estimates from Health and Retirement Study matched to Summary Earnings Record, Detailed Earnings File and Master Beneficiary Record.

**Sample:** We exclude workers with at least 5 years uncovered employment since 1981 and immigrants who spent 20 or more adult years outside of the United States. Estimates are weighted using HRS respondent weight for 2004.

**Notes:** Percentages may not sum to 100 due to rounding.

"\*" indicates that the mean in column 2 for the row differs significantly from the mean for the reference group (designated by "REF"), typically the mode, at at least the  $p < 0.05$  level.

**Appendix Table 1. Prevalence of Below-Poverty Social Security Family Benefits among Recipients Ages 63 and Older in 2003, by Sample Definition, Using Baseline Assumptions and Imputations**

	<u>Number of cases</u>		<u>Percent</u>
	<u>Total</u>	<u>With</u>	<u>with</u>
		<u>subpoverty.</u>	<u>subpoverty</u>
		<u>benefits</u>	<u>benefits</u>
<b>Starting sample:</b>			
<b>All beneficiaries</b>			
All ages 63 and older	11,204	2,897	25.9%
Ages 63 to 69	3,939	888	22.6%
Ages 70 to 74	2,538	600	23.6%
Ages 75 to 79	2,310	575	24.9%
Ages 80 to 84	1,562	450	28.8%
Ages 85 and older	1,283	440	34.3%
<b>Restrict to beneficiaries ages 63 to 74</b>			
Ages 63 to 74	6,275	1,488	23.7%
<b>Exclusions:</b>			
Foreign born, more than 20 adult years outside US	108	68	63.0%
More than 5 years since 1981 in uncovered employment	238	121	50.8%
<b>Final sample:</b>			
<b>Beneficiaries ages 63 to 74, excluding immigrants entering US in late adulthood, and long-term uncovered workers</b>			
	5,915	1,263	21.4%

**Source:** Author's estimates from Health and Retirement Study matched to Summary Earnings Record, Detailed Earnings File, and Master Beneficiary Record.

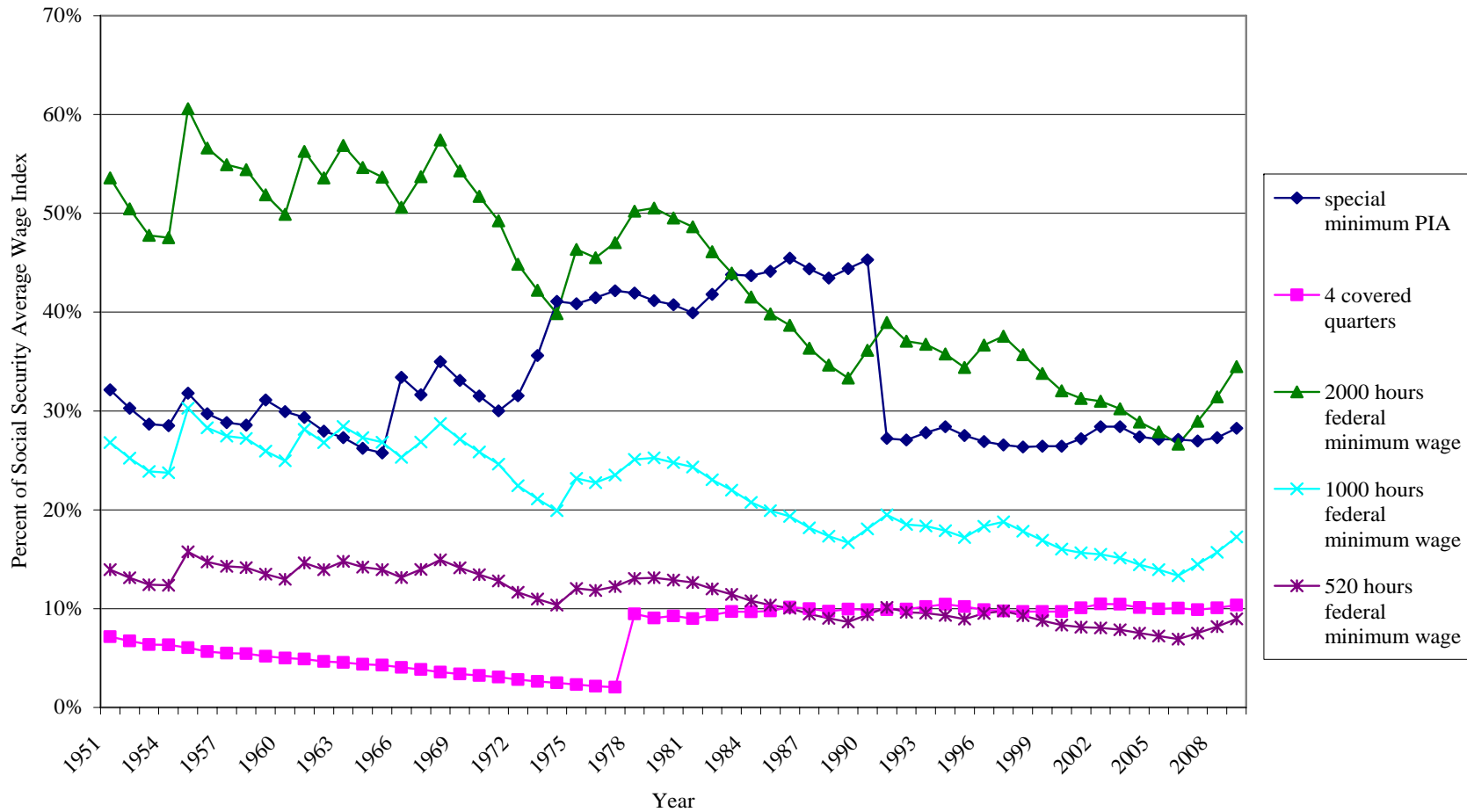
**Appendix Table 2. Sensitivity of Beneficiary Poverty Estimates to Alternative Sample Selection and Data Imputation Strategies**

Sample selection criteria	Percent of all with a sub-poverty benefit
<b>Type of Social Security benefit reports (after adjusting for part-year benefits)</b>	
Only use cases with administrative benefit reports for whole family	21.3
Married cases with administrative benefit reports for one spouse	8.3
Only use cases with self-reports	27.9
Non-claimants who are age eligible and have an earnings record	0.0
<b>Adjustments for part-year benefits (after combining administrative data and self-reports)</b>	
Exclude cases with part-year receipt for respondent	22.4
Exclude cases with part-year receipt for respondent or spouse	22.5
Without any adjustments for part-year receipt for respondent and/or spouse	23.4
<b>Adjustments for missing spouse data (after combining administrative data and self-reports and adjusting for part-year benefits)</b>	
Exclude cases where spouse data are missing, rather than treating these cases as single	21.4
Impute spouse Social Security benefit in cases where spouse data are missing due to late claiming or being just under the early eligibility age, rather than treating these cases as single	3.7
<b>Final sample</b>	
Best guess sample: combine administrative data and self-reports to maximum extent, contend with missing spouse data, and adjust for partial year receipt, as described in text	21.4

Source: Author's estimates from Health and Retirement Study matched to Summary Earnings Record, Detailed Earnings File and Master Beneficiary Record.

Sample: All sensitivity analyses exclude workers with at least 5 years uncovered employment since 1981 and immigrants who spent 20 or more adult years outside of the United States, consistent with main analyses. Estimates are weighted using HRS respondent weight for 2004.

Appendix Figure 1. Comparing Alternative Thresholds for Defining Work Years (as a Percent of the Average Wage Index), 1951-2009



Source: Author's calculations from policy parameters. We use the federal minimum wage as of the end of the year.

Note: PIA = Primary Insurance Amount