Peace of Mind *in* Retirement

Making Future Generations Better Off by Fixing Social Security

A Report

of The Heritage Center

for Data Analysis

PEACE OF MIND IN RETIREMENT:
MAKING FUTURE GENERATIONS BETTER
OFF BY FIXING SOCIAL SECURITY

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Millions of Americans with low and moderate incomes could use Social Security to secure retirement income and genuine wealth that they could pass on to their children and grandchildren.[1] Social Security[2] enhanced by retirement options, including voluntary personal retirement accounts (PRAs),[3] could become a key tool in providing economic security and peace of mind.

Regrettably, under current law, Social Security denies workers retirement options. The current system does not help families to accumulate wealth, because it forces all retiring workers to settle for nothing more than a fixed monthly payment and denies them the chance to build assets over the long term.

As is generally recognized, the current system provides Americans an unacceptably low return on their Social Security payroll taxes. However, few legislative efforts to reform the Social Secu-

rity system have focused on allowing families to create wealth that they could pass on to future generations. Instead, both defenders and critics of Social Security have discussed reform primarily as a way to address the system's long-term financial shortcomings.[4]

Defenders of today's Social Security, for example, respond to the system's projected insolvency with plans that include tax increases combined with benefit reductions and other fine-tuning adjustments.[5] On the other hand, reformers often advance PRAs primarily as a means to reduce or eliminate the system's long-term financial deficits.[6]

WHAT THIS REPORT SHOWS

Giving workers the option to invest a portion of their Social Security payroll taxes can greatly improve their long-term retirement security and help them create wealth that they

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1. Income categories referenced in this report are based on those used by the Social Security Administration. See Stephen C. Goss, "Appendix II: Comparison of Financial Effects of Advisory Council Plans to Modify the OASDI Program," in *Report of the 1994–1996 Advisory Council on Social Security*, Vol. 1, at *www.socialsecurity.gov/history/ reports/adcouncil/report/append2.htm* (January 26, 2004). For further details, see Appendix 5.

2. In this paper, "Social Security" refers only to the Old-Age and Survivors Insurance (OASI) portion of the program unless otherwise noted. This paper does not examine or advocate any changes in Social Security's Disability Insurance program. Even though both programs are often considered together as the Old-Age, Survivors, and Disability Insurance Trust Fund (OASDI), each is funded by its own separate tax and has its own trust fund.

3. The personal retirement accounts (PRAs) would be part of Social Security. They would allow workers to invest part of their existing payroll taxes and leave the funds in those accounts to their families if they died before reaching retirement age.

Current Social Security Benefits

This paper uses two measures of current Social Security benefits.

Current law refers to the maximum Social Security retirement benefit that can be paid using existing Social Security benefit calculation formulas and tax rates. The 2002 Social Security Trustees report indicates that,[1] starting in 2018, retirement benefits paid out by the system will exceed projected tax revenues.[2] This shortfall will exhaust the funds in the retirement system by 2044.[3] Current legislation requires that the Trustees limit benefit payments to the funds available. This requirement is projected to reduce benefits by an estimated 27 percent in 2044, increasing steadily to 35 percent by 2080.

Current law with revenue increases refers to Social Security retirement benefits as calculated by using existing Social Security benefit formulas, assuming that any shortfall is offset with revenue increases. In this report, benefits under current law and benefits under current law with revenue increases are equal through 2043. Beginning in 2044, current-law benefits are lower than benefits under current law with revenue increases.

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1. The 2003 and 2004 Social Security Trustees Reports come to a similar conclusion.

2. Social Security Administration, *2002 Annual Report of the Board of Trustees of the Federal Old-Age and Survivors Insurance and Disability Insurance Trust Funds*, March 26, 2002, Table IV.B1, at *www.ssa.gov/OACT/TR/TR02* (April 28, 2004).

3. *Ibid*., Table IV.B3.

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can pass on to future generations. This reform would allow millions of workers to build far more wealth than they otherwise could accumulate. Creation of PRAs is the cornerstone of a wealth-generating Social Security system.

This report by the Center for Data Analysis (CDA) at The Heritage Foundation demonstrates through 12 case studies how Social Security reform could help workers create new and lasting wealth and help provide for their retirement. Since critics of PRAs often focus on concerns for lower-income workers, the 12 case studies focus exclusively on low-income and moderate-income earners.

The 12 case studies in this report assume a reform plan that includes features drawn from several legislative proposals introduced in Congress.[7] The sample plan does not represent any official

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4. For more information on the shortcomings of the current system, see Appendix 2.

5. Henry Aaron of the Brookings Institution and Robert D. Reischauer of the Urban Institute list several alternatives such as increasing the age of initial retirement (currently at 62 with reduced benefits); accelerating the phase-in to age 67 for full benefits; altering the benefit calculation so as to reduce monthly payments; and expanding coverage to those few not currently in the system (mostly state government workers in a handful of states). See Henry Aaron and Robert D. Reischauer, *Countdown to Reform: The Great Social Security Debate* (New York: Century Foundation Press, 2001), pp. 102–127, especially Table 6-1 on p. 103. Others have proposed either increasing the payroll tax rate or requiring upper-income workers to pay those taxes on more of their income. In 2004, Social Security taxes were assessed only upon the first $87,900 that a worker earned.

6. Some proponents of PRA-based Social Security reform do, however, stress the need to allow wealth creation, not just to secure retirement income. In particular, see the President's Commission to Strengthen Social Security, *Strengthening Social Security and Creating Personal Wealth for All Americans*, December 2001, pp. 28–29, 32, and 55–56, at *www.commtostrengthensocsec.gov/reports/Final_report.pdf* (January 26, 2003).

7. A partial list of such reform bills introduced in the 107th Congress (with provisions for personal retirement accounts) includes the 21st Century Retirement Security Act (H.R. 2771), introduced by Representatives Jim Kolbe (R–AZ) and Charles Stenholm (D–TX); the Social Security Ownership and Guarantee Act of 2001 (H.R. 3535), introduced by Representatives Jim DeMint (R–SC) and Richard Armey (R–TX); and the Social Security Guarantee Plus Act (H.R. 3497), introduced by Representative E. Clay Shaw, Jr. (R–FL). For a list of more than a dozen bills proposing Social Security reform that were introduced during the 106th Congress, see Congressional Budget Office, *Social Security: A Primer*, September 2001, Appendix B, at *ftp.cbo.gov/32xx/doc3213/EntireReport.pdf* (January 26, 2003).

A Summary of the Sample Plan and the Assumptions Used

Sample Plan Highlights

- The sample plan is assumed to go into effect on January 1, 2003.

- Participation is voluntary.

- Participation is open only to those 45 and younger as of January 1, 2003.

- All specifications for the plan are in 2002 inflation-adjusted dollars, unless otherwise noted.

Personal Retirement Accounts (PRAs)

- A contribution rate is determined on a per-worker basis using a sliding scale starting at 7 percent for an annual income of $1 and ending with 2.5 percent for an annual income equal to Social Security's maximum taxable income.

- PRA portfolios are assumed to consist of 50 percent long-term government bonds and 50 percent private equities.

- The assumed average annual real rate of return of the PRA portfolio is 4.7 percent after administrative costs.

Monthly Retirement Benefits Under Reform

- Total reform benefits equal the lower of either current-law benefits (with revenue increases) or twice the individual poverty threshold for childless singles aged 65 or older (for married couples, the corresponding amount is three times the individual poverty level per couple).

- The government-paid portion of total reform benefits is a percentage of benefits that are calculated using a PRA-adjusted benefit formula. (The exact share of benefit retention ranges from 89 to 29 percent, depending on year of birth.)

- A PRA-financed annuity pays the remainder of total reform benefits.

- Any amount left in the PRA after financing the annuity can be used to provide extra monthly benefits, a lump sum payment, an inheritance to heirs, or any combination of these.

Note: The sample reform plan used in this study is based on components from several suggested plans but does not represent any official proposal and should not be construed as an official Heritage Foundation proposal.

proposal and should not be construed as an official Heritage Foundation plan. (See Figure 1.)

This report focuses exclusively on how Social Security could create wealth that first-generation families could bequeath to third-generation relatives.[8] The report considers hypothetical workers born between 1960 and 1976 and third-generation heirs born between 2010 and 2026. Income and life expectancy data from publicly available government databases are used to calculate income profiles and life expectancies. The report uses the intermediate-cost economic projections and Social Security assumptions of the 2002 Social Security Trustees Report. These assumptions and projections are not materially different from those of either the 2003 or 2004 Reports.

Reforming Social Security to allow voluntary PRAs would enable workers to build thousands of dollars of additional wealth over a working lifetime. Such wealth creation would allow intergenerational bequests for many more people than currently enjoy them.

As reported by respondents to the Survey of Consumer Finances, less than 13 percent of all households with annual incomes of less than $20,000 receive inheritances.[9] The median legacy for such households is $18,000. Only among families with annual incomes exceeding $100,000 does the frequency of inheritance exceed 25 percent.

Under a program of voluntary PRAs, many more millions of American workers could look forward to an inheritance.[10]

- **First Generation: Social Security reform using PRAs can substantially increase the transferable wealth of typical low-income and moderate-income Americans.**

  A single low-income woman born in 1968 could leave an additional **$25,120** to her heirs. (See Case Study 2 and Table 13 in Appendix 1.)

  A dual-income married couple with one low-income earner and one moderate-income earner, both born in 1973, could leave an additional **$119,550** to their heirs. (See Case Study 4 and Table 13 in Appendix 1.)

- **Third Generation: A grandchild or other heir receiving a portion of a first-generation PRA as a bequest could enjoy greatly expanded retirement options.**

  A divorced, moderate-income woman retiring in 2077 could, if she fully invests her bequest, leave **$165,630** to heirs. (See Case Study 10 and Table 13 in Appendix 1).

  A single moderate-income woman retiring in 2077 could either receive an additional monthly benefit of $970 or, if she fully invests her PRA bequest, leave **$306,380** to her heirs. (See Case Study 6 and Table 13 in Appendix 1).

OVERVIEW OF CASE STUDIES

The 12 case studies in this paper (see Appendix 1) show how additional wealth creation is possible for workers with a transferable PRA. In addition, they demonstrate how Social Security reform can dramatically expand the wealth of future generations through a bequest mechanism.

The case studies examine intergenerational wealth creation for three generations of American families. (See text box, "Why Focus on Multiple Generations?") Each family consists of a first-generation low-income or average-income worker and, in several cases, a spouse. Within each family, a case study illustrates how PRAs can enable wealth creation for a first-generation worker and the worker's spouse; the three third-generation heirs of that worker; and, in several cases, the spouses of those heirs. The distinguishing family characteristics of

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8. The two generations modeled in this report are referred to as the "first" and "third" generations, denoting a "grandparent" generation and a "grandchild" generation. The report assumes that first-generation workers and their spouses will specify that their bequest be divided equally among three third-generation heirs. The use of third-generation examples highlights the effect of compounding and accumulating assets over multiple years. Actual wealth generation will depend on many factors, including the rules governing the plan, the actual rates of return for the PRAs, and the amount remaining in the PRA after a worker has purchased a retirement annuity.

9. Calculated by the Center for Data Analysis using data from Federal Reserve Board, "2001 Survey of Consumer Finance," at *www.federalreserve.gov/pubs/oss/oss2/scfindex.html* (February 17, 2003). In this analysis, any major inheritance, gift, or bequest is considered an inheritance. Income figures represent adjusted gross income.

10. Historical evidence suggests that, when given the opportunity, Americans will create accounts that can be transferred across generations. For more details, see Appendix 3.

Why Focus on Multiple Generations?

This report examines the intergenerational effects of a Social Security reform plan that includes inheritable personal retirement accounts. Limiting the analysis to the first and third generations of a family helps to accomplish two fundamental goals. The first goal is to expand the horizon of retirement thinking by including multiple generations in the long-term financial planning process. The second is to establish a benchmark for future studies of retirement spending options that may be possible with Social Security reform.

To some extent, all PRA-based reform plans point out the need for Americans to reconsider the way they think about retirement security. Social Security operates by using payroll taxes paid by current workers each month to finance the benefit checks of current retirees in the following month. As a result, Social Security's provision of retirement income separates OASI taxes from benefits. This discourages people from thinking about retirement security as a process of long-run preparation involving multiple generations of a family.

PRAs that allow inheritances reinforce workers' responsibility to save for their retirement from their own resources. In addition, such PRAs reinforce the effect that parents and grandparents can have on their heirs' retirement wealth. By shifting the focus away from the short-term month-by-month funding of the current system, reform plans that include inheritable PRAs could encourage a long-run view in which families are increasingly responsible for their own retirement income.

Second, this report's focus on a PRA bequest from the first generation to the third generation highlights an alternative use of a PRA, which includes the advantage of long-term compounding that can create high levels of wealth for future generations. The PRA bequest provides a benchmark by which other alternatives can be analyzed. If workers understand the idea and value of the potential return of *one* specific alternative, they will have a perspective for measuring the trade-offs required in using PRAs for other retirement spending choices.

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each third-generation household are assumed to mirror those of its first-generation forebears—e.g., earnings,[11] ethnicity, gender, marital status, and (for two examples) occupation—except for a difference in birth years. All three heirs of the first-generation household are assumed to be born 50 years after the first generation.[12] In all married couples, both spouses are assumed to be born in the same year.

Workers in the case studies join the labor force at age 16, 18, or 21 and retire at age 67.[13] Two of the families have earners with gaps in their work history. Except in two case studies, specific occupations are not assumed for earners in families.

Life expectancies and earnings for the case studies are based on national averages for specific types of families. Among the 12 case studies, four are based on averages for whites, four use averages for African–Americans, two use averages for Hispanics, and two are of unspecified ethnicity. Birth years range from 1960 to 1976 for the first-generation members of families and from 2010 to 2026 for third-generation members.

Three of the families include only workers who are assumed to remain unmarried and without children throughout their working years (thus, their heirs would be regarded as grandnephews or
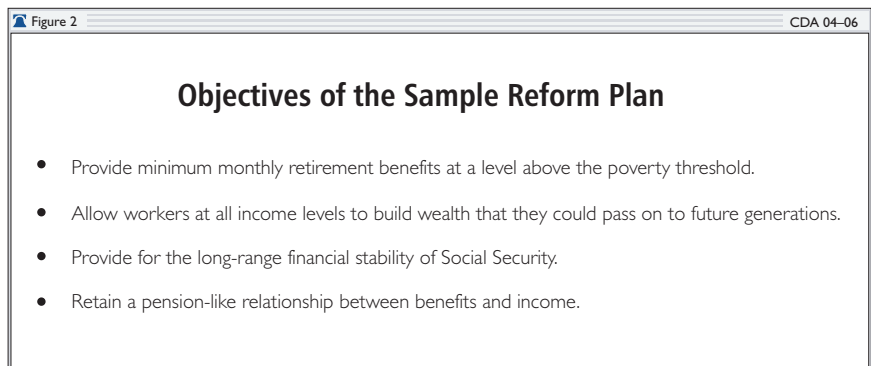
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11. In the case of earnings, the third generation is assumed to benefit from annual inflation-adjusted wage increases of 1.1 percent, per the 2002 Trustees Report's long-term projections. See Social Security Administration, *2002 Annual Report of the Board of Trustees of the Federal Old-Age and Survivors Insurance and Disability Insurance Trust Funds*, March 26, 2002, Table V.B1, at *www.ssa.gov/OACT/TR/TR02* (April 28, 2004). Hereafter cited as *2002 OASDI Trustees Report*.

12. Except for age, most of the demographic characteristics are assumed to remain constant during the worker's earning years. For example, the unmarried moderate-earning woman born in 1960 (Case Study 6) is assumed never to marry during her working years. For more details, see Appendix 5.

13. For details, see Appendix 5.

grandnieces rather than grand-sons or granddaughters). In one of these three families (Case Study 1), the first-generation unmarried worker dies before retiring but leaves his PRA to three third-generation heirs who do reach retirement age.

Seven families consist of married couples in both the first and third generations. The first generation in Case Study 10 consists of a woman who was married for a time, divorced early during her earning years, remained unmarried until retirement, and had no claim to her ex-husband's Social Security benefits. The third generation of Case Study 10 consists of the first-generation divorcée's three female heirs, who also marry and divorce early, remain unmarried until retirement, and claim no part of their ex-spouses' Social Security benefits. Case Study 9 illustrates wealth creation in the case of a first-generation married couple, in which one spouse dies before retirement, with three third-generation heirs and their spouses, all of whom reach retirement age.

Among the married-couple families (Case Studies 3, 4, 5, 7, 8, 9, 11, and 12), six are dual-earning couples (Case Studies 3, 4, 7, 9, 11, and 12) and two are single-earning couples (Case Studies 5 and 8). In all cases involving married couples, the PRA of the spouse who dies first is combined with the surviving spouse's PRA. Only upon the death of the surviving spouse is the PRA bequested to third-generation heirs.

Among the 12 case studies, 18 earners are represented in the first generation and 54 earners are represented in the third generation. Six case studies consist of dual-earning couples; four are composed of unmarried workers; and two include single-earning couples. Five of the first-generation workers are low-income earners, while the remaining 13 are average-income earners. Correspondingly, 15 of the third-generation workers are low-income earners and 39 are average-income earners. Among first-generation dual-earning married couples, four of the six include two average-

Objectives of the Sample Reform Plan

Figure 2   CDA 04–06

- Provide minimum monthly retirement benefits at a level above the poverty threshold.
- Allow workers at all income levels to build wealth that they could pass on to future generations.
- Provide for the long-range financial stability of Social Security.
- Retain a pension-like relationship between benefits and income.

income earners; one includes two low-income earners; and one includes an average-income earner and a low-income earner. Correspondingly, in the third generation, 12 of 18 dual-earning couples include two average-income earners; three couples include two low-income earners; and three couples include one average-income earner and one low-income earner.

The three heirs in the third generation of each case study differ from one another in the way they invest their bequest upon receipt. Under the sample reform plan, workers may either continue to invest all or part of the bequest in the PRA or consume it. The case studies assume that one of the three third-generation heirs saves the entire bequest at least until retirement, a second heir saves half of the bequest until retirement, and the third heir saves none of the bequest. Tables 1 through 12, within Case Studies 1 through 12, show the results for the third-generation heir who fully invests the bequest into a PRA. Table 13 displays results for all three heirs in each case study.

Description of the Sample Social Security Reform Plan. The sample plan used in this paper seeks to meet the four objectives listed in Figure 2.

To meet the first and fourth objectives, the sample reform plan uses two methods to fund the total benefit, which equals either (1) twice the poverty threshold for persons age 65 and above not living with minor children[14] or (2) the benefits promised under current law assuming revenue increases, whichever is less. The government pays one type of benefit, while the other type is paid by an annuity financed out of the worker's PRA at retirement.

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14. For married couples, the ratio is 300 percent of the individual poverty threshold for individuals age 65 and above not living with minor children. Applying this ratio in 2003 produces an amount that is 238 percent of the poverty threshold for couples age 65 and above who are not living with minor children.

The government-paid portion of benefits is calculated using PRA-adjusted benefit formulas similar in structure to the formulas used under current law. The government-paid benefit amounts are modified using a benefit retention formula that varies between 89 percent and 29 percent, depending on the year in which the retiree is eligible for full benefits. The government portion of benefits cannot exceed total retirement benefits under the reform plan. If a worker's government-paid portion of benefits is less than the total benefit, the worker's PRA-funded annuity finances the difference.[15] Single-earner couples and those who meet current-law requirements for the Special Minimum Personal Insurance Amount would continue to receive special consideration under the sample plan.[16]

The worker's PRA is funded with a portion of his or her taxable earnings. PRA contribution rates are determined by the worker's annual earnings, using a linear scale beginning at 7 percent for $1 and ending at 2.5 percent for each year's Social Security maximum taxable earnings.[17] The PRA contribution rate determines the share of Social Security taxable earnings that is contributed to the worker's PRA for the year. According to this scale, the lower a worker's earnings, the greater the share of earnings that is invested in a PRA. The amount of each worker's earnings determines the specific contribution made to the PRA each year. (See Figure 6 in Appendix 5.)

The worker chooses PRA investments from a limited range of options, using a model similar to the Thrift Savings Plan (TSP) that covers most federal civilian and military employees. In the case

studies, a PRA portfolio of 50 percent stock index funds and 50 percent long-term government bond funds is used, yielding a blended 4.7 percent inflation-adjusted rate of return, net of administration costs.[18] This conservative portfolio mix is comparable to the 4.6 percent estimated portfolio rate of return assumed by the President's Commission to Strengthen Social Security.[19]

The PRA contribution formula promotes wealth creation even for lower-income earners. Those with the lowest earnings are able to contribute a larger share of their earnings to their PRAs. To ensure adequate time for compounding and to compensate for market fluctuations, all persons age 45 and above on the plan's January 1, 2003, starting date are excluded from participation.

At retirement, personal wealth remaining in the PRA after purchase of the annuity could be left in the PRA account until the worker's death.[20] The remaining balance could then be transferred to a surviving spouse, grandchild, or other beneficiary, who could consolidate the funds into his or her own PRA.[21] The beneficiary (if an adult) may at that point consume all or part of the bequested portion of the PRA. If invested, the bequest mechanism extends the period of compounding and helps to produce sizable increases in the PRAs in subsequent generations.

For the third goal, the plan's fiscal impact was evaluated using a model that analyzes Social Security's Trust Fund finances. This analysis indicates that the inflation-adjusted cumulative actuarial deficit under the sample reform plan would be less

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15. Any remaining difference would be funded through an additional government-paid benefit.

16. For additional details, see Appendix 5.

17. The portion of earnings that exceeds the Social Security taxable maximum is ignored when determining PRA contributions, just as it is ignored under current law when calculating OASI payroll taxes and retirement benefits.

18. The assumed average rate of return for the 50 percent equity investment is 7.0 percent. Goss, "Appendix II," p. 171. The assumed average rate of return for the 50 percent invested in government bonds is 3.0 percent, as in *2002 OASDI Trustees Report*, Table V.B1 and Table V.B2. Together, these yield a blended average portfolio return of 5.0 percent. An administrative fee of 0.3 percent is then applied, as in President's Commission to Strengthen Social Security, *Strengthening Social Security and Creating Personal Wealth for All Americans*, p. 97.

19. President's Commission to Strengthen Social Security, *Strengthening Social Security and Creating Personal Wealth for All Americans*, pp. 97–98.

20. This choice results in the maximum bequest for a third-generation heir. If the first generation chooses to use more of their PRA for extra monthly benefits or some other purpose, the amount remaining for heirs is decreased. This report assumes that the PRA is always invested in a portfolio consisting of 50 percent equities and 50 percent federal government bonds.

21. For married couples, the PRA of the deceased spouse is combined with that of the surviving spouse. Only when the surviving spouse dies is the PRA bequested to third-generation heirs.

than $11 trillion through 2080—approximately 45 percent of the cumulative actuarial deficit under the current system for the same period. In addition, the estimated net present value of the unfunded liability through 2080 would be approximately 4 percent lower than the current system's unfunded liability of $4 trillion.[22]

Calculations for Case Studies. Results for the first generation and one type of third-generation heir are presented for each case study in Case Study 1 through Case Study 12 in Appendix 1. Table 13 in Appendix 1 summarizes wealth creation options for three third-generation heirs for each of the case studies. The calculations assume that the sample reform plan went into effect on January 1, 2003.

Chart A in each case study contrasts the net wealth available at retirement with and without a PRA for a third-generation household that fully invests its bequest in the PRA. The bar labeled "Without PRA" depicts the third-generation household's accumulation of non-PRA wealth. Non-PRA wealth consists of a combination of real estate holdings, motor vehicle wealth, retirement savings, stock and mutual fund holdings, and other financial wealth, minus unsecured debt. During the household's working years, non-PRA wealth grows in two ways: The household annually increases its holdings of each category of non-PRA wealth by a specified share of its annual household labor income, and each category of household wealth appreciates at a specified growth rate.[23]

The second bar shows net household wealth with a PRA. This amount consists of non-PRA wealth and the PRA balance *after* the worker purchases an annuity that provides the non–government-paid portion of Social Security benefits. In all of the case studies, there are funds remaining in the PRA even after the worker purchases the required annuity.

The remaining balance represents a substantial increase in the worker's household wealth.[24]

The table in each case study highlights the various retirement benefit options available to first-generation and third-generation households that fully invest their PRAs.[25] Data for the first-generation household are on the left side of the table; data for the third-generation household are on the right side. The top data row shows current-law benefits for both the first and the third generations. The bottom two data rows describe "Monthly Social Security Benefits" paid under the sample reform plan. Monthly benefits under the sample reform are composed of a "Part A" portion paid by the government and a "Part B" portion paid by the annuity purchased from the worker's PRA.

At retirement, a first-generation worker uses some of his or her PRA to purchase an annuity to finance the Part B retirement benefits. Funds remaining in the PRA after the annuity purchase are assumed to remain invested in the PRA, although the worker makes no new contributions. When the first-generation household dies, the funds in the PRA are bequeathed to three grandchildren and their spouses or other beneficiaries. This bequest can increase the third-generation heir's PRA and is exempt from all estate, gift, and generation-skipping taxes.

On the right side of the table, the last two data rows illustrate retirement options for a third-generation household that fully invests its bequest. The middle row illustrates the monthly retirement benefit that the third-generation household may claim if it chooses to maximize its monthly benefit (see "Total" under "Monthly Social Security Benefits"). Amounts shown under "Nest Egg at Retirement" and "Bequest to Future Generation" in the last row illustrate the retirement options if the third-generation household maximizes its nest egg at retirement or its bequest.

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22. For more information on the CDA calculations used to make these estimates, see Appendix 5.

23. CDA researchers calculated the assumed growth rate for each type of non-PRA wealth using data from Federal Reserve Board, "2001 Survey of Consumer Finance."

24. These wealth increases are made possible because the sample reform plan lacks a separate requirement forcing retirees to purchase an annuity that exhausts their PRA. For more details about the importance of providing alternatives to forced annuitization, see Appendix 4. The value of net household wealth "With PRA" from Chart A is equal to the sum of "Without PRA" from Chart A and "Nest Egg at Retirement" from the table in each case study.

25. First-generation households are assumed to maximize their bequests to third-generation heirs. This assumption illustrates the maximum effect of compounding a PRA over long periods of time. Alternatively, a first-generation retiree could utilize the full range of options open to the third generation.

Chart B in each case study represents the long-term contribution of PRAs to the net wealth of the first-generation family and the net wealth of one of the third-generation families. The lines show the PRA wealth for each generation at every age. The lower wealth line shows the household PRA wealth of the first generation, while the higher line shows the PRA wealth of the third generation. The drop in wealth at age 67 for both generations is due to the required purchase of a PRA annuity at retirement. For the first generation, the remaining PRA is left to grow at a 4.7 percent inflation-adjusted rate of return (net of administration costs) until the death of the first-generation household, when it is transferred to third-generation heirs as a bequest.[26] The final value of the first generation's line in Chart B is the total bequest to all third-generation heirs. One-third of the total bequest goes to an heir that fully invests it. This portion of the bequest is added to the third-generation PRA, and the resulting PRA value is shown in Chart B as "Bequest (Fully Invested)."

Although this paper examines transfers from the first generation to the third generation, in practice, the bequest could be made to any generation. As shown in Chart B, when the first-generation household dies and leaves a bequest to the third generation ("Bequest to All Heirs"), there is a large increase in the third-generation household's PRA account balance ("Bequest (Fully Invested)"). The bequest received from the first generation is also shown in Table 2 for each case study (see "Bequest to Third Generation"). In almost all of the case studies, the decline in PRA wealth resulting from purchasing the annuity is relatively smaller for the third generation than for the first generation. This is largely because the third-generation household benefits from fully investing its bequest from the first generation.

In all the case studies, the third-generation household that fully invests its bequest has substantially greater wealth than the first generation for the following reasons:

- Unlike the first generation, the third generation adds a bequest into their PRA. This trans-fer of wealth from the first to the third generation dramatically increases wealth because the invested bequest can grow for many years before the third generation retires.

- The third generation begins contributing to their own PRA at the start of their working lives, unlike the first generation, which must wait until enactment of the reform plan to begin investing in personal retirement accounts.

- Later generations are assumed to benefit from sustained economy-wide increases in inflation-adjusted wages as projected by the Social Security Administration.[27]

There is a trade-off between the bequest that the third-generation families receive and the amount of PRA that the first generation uses to increase their monthly retirement benefits. If first-generation retirees use any of their PRA to increase their own retirement income, they will leave less to their heirs. However, in all 12 case studies, it is assumed that the first generation chooses to maximize the amount transferred to the third generation.

Two case studies assume that a first-generation worker dies before retirement. In Case Study 1, a first-generation worker dies at age 55, leaving a bequest to three third-generation grandnephews. In this example, the granduncle's PRA is bequeathed to the grandnephews at an early age, and the case study shows the wealth creation of one of the three heirs. In Case Study 9, the higher-earning spouse of the dual-earning couple dies at age 55, and the deceased's PRA is transferred to the PRA of the surviving spouse.

Table 13 shows retirement options for all the third-generation heirs in each case study, including those who do not fully invest their PRA bequest. The table summarizes and extends the third-generation findings displayed in the case study tables. Each case study is identified by a number in the first column on the left. For each case study, the table shows three of the retirement options available to the three third-generation heirs. The top row for each case study shows the retirement options of the heir who fully invests the entire bequest in his or her PRA, through retirement.[28]

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26. The portfolio mix and rate of return during the post-retirement PRA buildup is assumed to remain the same as it was during working years.

27. The 2002 Trustees Report projects long-term wage increases of 1.1 percent per year net of inflation. See *2002 OASDI Trustees Report*, Table V.B1.

The second row shows the retirement options for an heir who invests half of the bequest upon receipt, and the bottom row shows options for an heir who invests none of the bequest. In each case study, the more of the bequest PRA that an heir sets aside, the greater is the heir's retirement benefits.

Summary for Selected Case Studies. Case Study 1 highlights the advantages of PRAs with real property rights by examining two generations of low-income single males in which the first-generation granduncle dies at age 55, well before Social Security retirement benefits would begin. As a result, he leaves his PRA ($34,985) to three grandnephews. This bequest has dramatic effects on the PRA balance of the third-generation heir who leaves the bequest fully invested. This is because the granduncle dies before reaching retirement; therefore, none of his PRA is used to purchase an annuity. Because the grandnephew receives the inheritance in early childhood, the bequest experiences a long period of compound growth. Consequently, when the grandnephew retires, he can purchase a Social Security retirement annuity and still have $202,015 ("After Annuitization" in Chart B) remaining in his PRA.

In lower-income cases, increases in wealth can be particularly striking. For instance, the first-generation low-income single woman in Case Study 2 significantly increases her grandniece's wealth at retirement. Each of the three third-generation heirs receives one-third of the first-generation bequest, which totals $25,120. Fifty years later, the third-generation heir who leaves her bequest fully invested enjoys a $47,430 nest egg. The grandniece could in turn leave a bequest of up to $94,270 to her heirs.

Case Study 3 is another low-income case, which shows the benefits for a dual-earning couple. The couple would be able to leave a total of $36,995 to third-generation heirs. Three options are shown in Table 3 for the third-generation couple that fully invests their bequest. All of the options are dramatic improvements over the current Social Security system. The couple could increase their monthly retirement benefits by about $1,200 over current-law levels or spend the accumulated amount (the

"Nest Egg at Retirement" of $91,400) to help buy a home or purchase retirement leisure. Alternatively, they could leave their remaining PRA invested and generate a bequest of $181,670 to their heirs. The effect of the bequest on the third generation can be seen for this case study in Table 13. While the heir who fully invests the bequest may enjoy a nest egg at retirement of $91,400, the heir who invests only half can set aside a nest egg of $60,775. The third heir, who saves none of the bequest, accumulates a nest egg of $30,150 at retirement.

Case Study 4 shows a husband and wife who both work. When they die, they leave behind a bequest of $119,550. As a result, their third-generation heirs who invest the entire bequest could increase their monthly retirement benefits by $3,085 over the current-law level.

Case Study 10 shows a first-generation divorced woman, earning a moderate income, who has no claim to her former husband's Social Security benefits. She has an eight-year gap in her work history, dating from before the reform was enacted. Each third-generation heir is also a moderate-income divorcée, with an eight-year gap in her work history and no claim to her ex-husband's Social Security benefits.[29] The gap in working years highlights one of the reform plan's critical advantages for a third-generation earner, as compared to the current system. During the years that she was not employed, the money invested in a PRA continues to grow even without further contributions.

The first-generation woman can leave about $17,215 to third-generation heirs. As a result, a granddaughter fully investing her bequest could retire with a nest egg of $76,040. If the third-generation heir chooses to maximize her bequest, she could leave behind $165,630.

THE IMPORTANCE OF WEALTH CREATION

A growing body of research has shown a connection between asset accumulation and several positive intergenerational effects, especially among lower-income families. These reports usually emphasize the effects that wealth has during the formative and adult working years of parents and

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28. This repeats the data shown in the top row of the table in each respective case study.

29. This report assumes that a divorced woman does not work during her married years and does not remarry later in life. For further details about the assumptions on divorcées, see Appendix 5.

their children, while the retirement benefits of such wealth creation are often only assumed.

However, a PRA-based Social Security reform could be the capstone to a lifetime of wealth creation. While other forms of saving can improve the worker's well-being before retirement, voluntary PRAs can help to secure retirement income as well as help future generations build retirement wealth through first-generation bequests. Opportunities for wealth creation are especially helpful for lower-income workers because the benefits of even modest bequests can be large in proportion to the retirement wealth they would otherwise have.

The possession of even modest wealth over the course of a person's lifetime contributes greatly to that person's development and economic security, as well as the development and economic security of his or her children. Research by Gautam N. Yadama and Michael Sherraden of the Center for Social Development (CSD) indicates that people with assets may be more future-oriented, prudent, confident about their prospects, and connected with their community.[30] Deborah Page-Adams and Nancy Vosler, also from the CSD, found that, among autoworkers affected by a plant closing, those owning homes were less likely than renters to suffer from depression or alcoholism, even after taking into account differences in income and education.[31]

However, the positive effects of wealth do not stop with the current generation of workers. Other research has shown that wealth accumulation may also produce important behavioral and socioeconomic improvements for families *across* generations. One set of researchers found that the saving habits of families are more important than family income in predicting teenage saving behavior.[32] Richard K. Green and Michelle J. White demonstrated that children of homeowners are more likely to stay in school and that daughters of homeowners are less likely to have children as teenagers, compared to children of renters.[33] They further concluded that these positive improvements were most dramatic among those with low incomes.[34] Finally, Thomas P. Boehm and Alan M. Schlottmann found that increased levels of home ownership among low-income families lead to increased rates of high school graduation and college attendance for children in those families.[35]

While wealth is important during a person's developing and working years, it also increases one's range of retirement options. Expanding retirees' options over the use of their retirement contributions is vital because wealth at retirement can be used for more than just income security. As one set of researchers observed, "Wealth is something like traveler's checks: you take them along on vacation 'just in case,' but odds are they will remain uncashed and available for sundry goods after the journey is complete."[36]

For this to happen, however, retirees must have as much control as possible over the disposition of

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30. Gautam N. Yadama and Michael Sherraden, "Effects of Assets on Attitudes and Behaviors: Advance Test of a Social Policy Proposal," *Working Paper* No. 95-2, Washington University Center for Social Development, 1995, p. 8, at *gwbweb.wustl.edu/csd/Publications/1995/wp95-2.pdf* (January 26, 2004). As measures of personal behavior, Yadama and Sherraden used indices for prudence, efficacy, horizons, connectedness, and effort based on longitudinal surveys developed by the Survey Research Center of the University of Michigan. They apply regression analysis to test three hypotheses: (a) more asset holding causes increases in the indices; (b) more income causes increases in the indices; and (c) higher values of the indices cause more asset holding. They find that the data best support the first hypothesis (pp. 11–13).

31. Deborah Page-Adams and Nancy Vosler, "Homeownership and Well-Being Among Blue-Collar Workers," *Working Paper* No. 97-5, Washington University Center for Social Development, 1997, pp. 6–7, at *gwbweb.wustl.edu/csd/Publications/1997/wp97-5.pdf* (January 26, 2004).

32. Mary E. Pritchard, Barbara Kimes Myers, and Deborah J. Cassidy, "Factors Associated with Adolescent Saving and Spending Patterns," *Adolescence*, Vol. 24, No. 95 (Fall 1999), pp. 711–723. The authors reviewed results of a survey of 1,619 employed high school seniors and their parents from the 1982 sophomore cohort of the High School and Beyond Study.

33. Richard K. Green and Michelle J. White, "Measuring the Benefits of Homeowning: Effects on Children," *Journal of Urban Economics*, Vol. 41 (1997), pp. 441–461.

34. *Ibid.*, pp. 445–446, 448, and 457.

35. Thomas P. Boehm and Alan M. Schlottmann, "Housing and Wealth Accumulation: Intergenerational Impacts," *Low-Income Homeownership Working Paper Series*, LIHO-01.15, Harvard University Joint Center for Housing Studies, October 2001, pp. 13 and 15, at *www.jchs.harvard.edu/publications/homeownership/liho01-15.pdf* (January 26, 2004).

their retirement wealth. Several members of the 1994–1996 Social Security Advisory Council have expressed this view:

> While we understand the desire to restrict people from spending down their assets in order to qualify for means-tested transfer programs, we believe that forcing people to convert their [personal retirement account] balances into annuity incomes beyond levels that protect against such behavior goes beyond the reasonable province of the public interest.[37]

Ample evidence suggests that the Social Security system currently locks up far too much retirement wealth, restricting options beyond what is socially necessary or justifiable. Social Security reform with PRAs can address this shortcoming of the current system both by allowing workers to build income security for their retirement years and by facilitating the transmission of wealth across generations.

The behavior of retirees who can choose the amount of retirement wealth to lock into annuities illustrates the need to balance retirement income requirements with funds set aside to offset life's uncertainties. For instance, in examining Chile's experience of allowing workers to choose how to receive personal account benefits, Olivia Mitchell reports that only about 40 percent of Chileans choose a life annuity.[38] Also, members of the TIAA–CREF (Teachers Insurance and Annuity Association–College Retirement Equities Fund), a private pension plan for teachers and other educational personnel, seldom choose a fixed life annuity.[39] Such behavior indicates that retirees realize the importance of flexibility over their long-term spending needs and consequently prefer not to lock up excessive retirement income in annuities.

The reasons why retirees choose more liquidity in and control over retirement savings also indicate how PRAs can correct Social Security's currently restrictive format. Massachusetts Institute of Technology economist James M. Poterba suggests at least three reasons why relatively few retirees choose to purchase annuities: the desire to leave a bequest to heirs, the desire to hold on to savings for precautionary reasons, and the high cost of annuities.[40] A recent survey of financial planners showed that many individuals do not wish to annuitize their assets because of a bequest motive and fear over losing control of their portfolio's principal.[41]

However, even in the absence of an overt desire to leave a bequest, the desire to keep retirement savings liquid for precautionary reasons still produces higher levels of bequest than might be expected. Because of the dual purpose served by nonannuitized assets (as a reservoir of emergency funds and as a potential legacy for future generations), even the absence of an intention to leave an inheritance results in a high incidence of bequests.[42] This sug-

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36. Karen E. Dynan, Jonathan Skinner, and Stephen P. Zeldes, "The Importance of Bequests and Life-Cycle Saving in Capital Accumulation: A New Answer," *The American Economic Review*, Vol. 92, No. 2 (May 2002), pp. 274–278.

37. Joan T. Bok, Ann L. Combs, Sylvester J. Schieber, Fidel A. Vargas, and Carolyn L. Weaver, "Restoring Security to Our Social Security Retirement Program," in *Report of the 1994–1996 Advisory Council*, Vol. 1, January 1997, p. 117, at *www.socialsecurity.gov/history/reports/adcouncil/report/bok2.htm* (January 26, 2004). These members of the 1994–1996 Advisory Council on Social Security favored a reform consisting of advanced funding in the form of personal savings accounts (PSAs). Theirs was one of three separate reform proposals offered by three groups of the panel's members. None of the proposals received unanimous support from the panel.

38. Olivia S. Mitchell, "Developments in Decumulation: The Role of Annuity Products in Financing Retirement," *Discussion Paper* PI-0110, Pension Institute, June 2001, p. 26, at *www.bbk.ac.uk/res/pi/wp/wp0110.pdf* (January 26, 2004).

39. Martin Feldstein and Elena Ranguelova, "The Economics of Bequests in Pensions and Social Security," in *The Distributional Aspects of Social Security and Social Security Reform*, A National Bureau of Economic Research Conference Report, ed. Martin Feldstein and Jeffrey B. Liebman (Chicago: University of Chicago Press, 2002), p. 371. In note 2, the authors report that 74 percent of TIAA–CREF participants choose an annuity for a fixed term of only 10 years rather than a full life annuity.

40. James M. Poterba, "Annuity Markets and Retirement Security," delivered at the Third Annual Conference of the Retirement Research Consortium, May 17, 2001, at *www.mrrc.isr.umich.edu/conferences/cp/cp01_poterba.pdf* (January 26, 2004).

41. Loss of control was cited as the primary reason by 31 percent of respondents, and a desire to leave assets for heirs was cited by 18 percent. See American Council of Life Insurance, "Positioning and Promoting Annuities in the New Retirement Environment," 1999, quoted in Jeffrey R. Brown, "How Should We Insure Longevity Risk in Pensions and Social Security?" *Issue in Brief* No. 4, Center for Retirement Research at Boston College, August 2000, p. 11.

gests that the fears used to justify Social Security's restrictions on retirees' control of their retirement wealth could be overstated.[43]

Bequests can expand the retirement wealth of future generations and could especially help to pull lower-income earners out of the intergenerational poverty trap. Edward Wolff of New York University found that wealth transfers may equalize the distribution of wealth across families. In particular, he noted that, "though wealth inequality has risen in the United States between 1983 and 1998, the increase may have been even greater were it not for the mitigating effects of inheritances and gifts."[44] Wolff's "most surprising finding" was that:

> inheritances and other wealth transfers tend to be equalizing in terms of the distribution of household wealth. Indeed, the addition of wealth transfers to other sources of household wealth has had a sizable effect on reducing the inequality of wealth. The results

appear counterintuitive. Richer households do receive greater inheritances and other wealth transfers than poorer households. However, *as a proportion of their current wealth holdings*, wealth transfers are actually greater for poorer households than richer ones. That is to say, a small gift to the poor means more than a large gift to the rich.[45]

Research on the possible distributional effects of replacing Social Security with a system of individual accounts corroborates these findings. Jagadeesh Gokhale of the American Enterprise Institute performed simulations to find how individual accounts would affect the intergenerational wealth mobility of hypothetical workers and their families. He found that under individual accounts,[46] younger workers were dramatically more likely to exceed their parents in accumulating wealth at retirement than they were under the current system.[47] This finding is illustrated in Figure 3.

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42. Research by Karen E. Dynan, Jonathan Skinner, and Stephen P. Zeldes suggests that even in the presence of a desire to bequeath assets, the precautionary motive still drives the decision to save retirement assets. "[A]llowing for uncertainty resolves the controversy over the importance of life-cycle and bequest saving by showing that these motives for saving are overlapping and cannot generally be distinguished. A dollar saved today simultaneously serves both a precautionary life-cycle function (guarding against future contingencies such as health shocks or other emergencies) and a bequest function because, in the likely event that the dollar is not absorbed by these contingencies, it will be available to bequeath to children or other worthy causes." See Karen E. Dynan, Jonathan Skinner, and Stephen P. Zeldes, "The Importance of Bequests and Life-Cycle Saving in Capital Accumulation: A New Answer," *The American Economic Review*, Vol. 92, No. 2 (May 2002), pp. 274–278.

43. Joan T. Bok and others succinctly made this point on the 1994–1996 Advisory Council when stating their reasons for not supporting one version of PRA-based reform that puts too many restrictions on investment choices and benefit access. "Our first concern is that this option simply contains far more restrictions on workers' choices than we deem necessary or desirable.… Presumably in order to prevent some workers from making costly mistakes, the government would prevent all workers from making truly profitable investments.… The plan also forces workers to annuitize their full accumulations at retirement—no matter what their other sources of income, their life expectancy, or their medical or other family needs. Presumably in order to prevent any worker from depleting his or her accumulation and potentially falling into poverty before the end of life, the government would prevent all workers from having the opportunity to bequeath a portion of this wealth to their heirs." Bok *et al.*, "Restoring Security to Our Social Security Retirement Program," p. 129.

44. Edward N. Wolff, "Inheritances and Wealth Inequality, 1989–1998," *The American Economic Review*, Vol. 92, No. 2 (May 2002), p. 263.

45. *Ibid.* (emphasis in original).

46. "While most reform proposals envision supplementing the current system or only partially replacing it with individual accounts, eliminating Social Security in the simulation is equivalent to establishing a *self-financed but mandatory individual accounts system* because the households that populate the computer simulation save in order to smooth consumption over their lifetimes. The simulation thus forces each household to accumulate assets sufficient to maintain retirement consumption at pre-retirement levels." Jagadeesh Gokhale, "Does Social Security Worsen Inequality?" Federal Reserve Bank of Cleveland *Economic Commentary*, August 15, 2001, p. 2, at *www.clevelandfed.org/Research/Com2001/0815.pdf* (June 2, 2004) (emphasis added). The simulation uses an overlapping-generations model simulating the U.S. economy, including Social Security taxes and retirement wealth. For more details on the model used, see *ibid.*, p. 3, note 2, and Jagadeesh Gokhale, Laurence J. Kotlikoff, James Sefton, and Martin Weale, "Simulating the Transmission of Inequality via Bequests," *Journal of Public Economics*, Vol. 79, No. 1 (January 2001), pp. 93–128.

47. Gokhale, "Does Social Security Worsen Inequality?"

Figure 3

Figure 3: Social Security's Effect on Intergenerational Wealth Mobility at Retirement

(The Probability of a Child's Retirement Wealth, Given Parents' Retirement Wealth)

Simulations Under Current Social Security:

Parents' Retirement Wealth
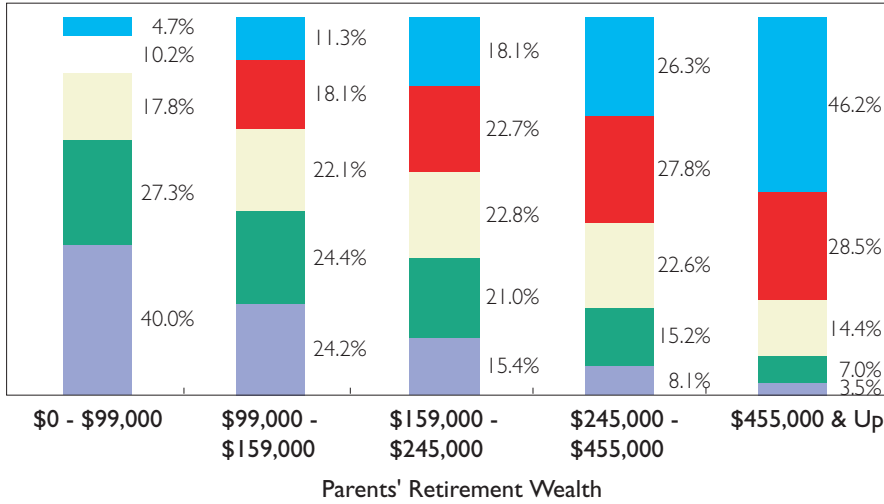
Child's Retirement Wealth:

- ■ $455,000 & Up
- ■ $245,000 - $455,000
- ■ $159,000 - $245,000
- ■ $99,000 - $159,000
- ■ $0 - $99,000

Simulations Without Social Security:

Parents' Retirement Wealth
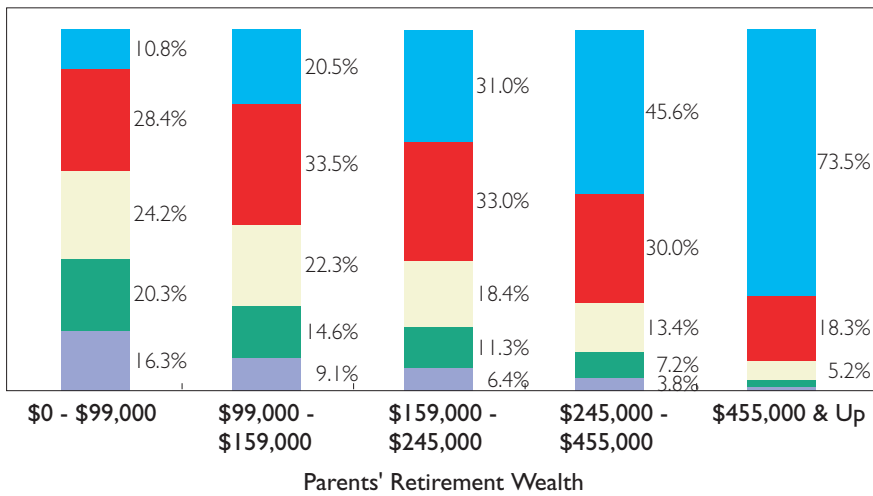
Note: The percentages represent the probability that a child will retire within a certain range of retirement wealth given the amount of retirement wealth available to the parents. The categories of bequeathable wealth are the quintiles used in the Gokhale simulation model. Some results not displayed due to their small size.

Source: Jagadeesh Gokhale, "Does Social Security Worsen Inequality?" Federal Reserve Bank of Cleveland, *Economic Commentary,* August 15, 2001, p. 3, Table 1, at *www.clev.frb.org/Research/Com2001/0815.pdf* (October 23, 2002).

Gokhale's simulations showed, for example, that under the current Social Security system, children whose parents had less than $100,000 in retirement wealth have a 60 percent chance of exceeding that level. Less than 5 percent would retire with wealth in excess of $455,000. However, under the simulated alternative to Social Security, children whose parents had less than $100,000 in retirement wealth enjoyed an 80 percent chance of exceeding their parents' wealth level and an 11 percent chance of retiring with an excess of $450,000 in wealth. The children of workers from all five wealth levels that Gokhale modeled were more likely to meet or exceed their parents' level of retirement under individual accounts than under the current system.

Additional research shows that intergenerational wealth creation can increase intergenerational wealth mobility.[48] This effect is often overlooked in the debate on Social Security reform but could be instrumental in helping to lift future generations of current lower-earning families out of poverty cycles.

CONCLUSION

If Congress does not reform the current system, Social Security will not be able to provide promised current-law benefits. When Social Security's easily foreseeable financing problems were pointed out to J. Douglas Brown, one of the system's founders,[49] he replied that it did not matter because by the time the "flood" of payments came due, he and his generation would be dead.[50] Almost 70 years later, this approach is no longer possible.

A. Haeworth Robertson, a former Social Security Chief Actuary, provided a more constructive approach:

[Any reform plan] has limitations since it is difficult to formulate a perfect program to accommodate a heterogeneous society such as exists in the United States. The best way to accommodate these diverse needs, of course, is to minimize government-dictated standards and maximize individual freedom of choice.[51]

The examples in this paper demonstrate that reforming Social Security through the use of PRAs can provide workers with realistic options for achieving financial independence during retirement in both current and future generations. PRAs can provide higher rates of return and facilitate wealth creation across generations.

These 12 case studies of low-income and average-income families show that American workers could accumulate wealth in the thousands—in some cases, hundreds of thousands—of dollars through a Social Security reform that includes personal retirement accounts. This increased wealth would be available in addition to a maintenance level of Social Security retirement benefits.

PRAs could help millions of American families to build savings and accumulate wealth that they could use during retirement or pass on to future generations, thus becoming part of an overall strategy to provide a lifetime of greater wealth and other benefits. Ultimately, this reform could provide millions of parents, their children, and their grandchildren with the opportunity to attain greater economic security and independence through their own personalized retirement assets.

—William W. Beach is John M. Olin Fellow in Economics and Director of, Alfredo B. Goyburu is a Policy Analyst in, Ralph A. Rector is Research Fellow and Project Manager in, Kirk A. Johnson is Senior Policy

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48. "*Intergenerational* mobility across the distribution of bequeathable wealth refers to the likelihood that children of poor (or rich) retirees will themselves retire poor (or rich). High intergenerational wealth mobility means that the offspring of poor retirees have a good chance of retiring with more bequeathable wealth than their parents." Gokhale, "Does Social Security Worsen Inequality?" p. 2.

49. "J. Douglas Brown was one of a small number of persons who drafted the original Social Security Program enacted in 1935." Social Security Administration, "J. Douglas Brown," at *www.socialsecurity.gov/history/brown.html* (January 26, 2004).

50. Brown's actual words were "*après nous le deluge*" (after us, the deluge). He expressed this sentiment as chairman of the 1937–1939 Advisory Council on Social Security during debates on the merits and defects of financing benefits by the current unfunded pay-as-you-go method. Martha Derthick, *Policy Making for Social Security* (Washington, D.C.: Brookings Institution, 1979), p. 235.

51. A. Haeworth Robertson, *The Coming Revolution in Social Security* (McLean, Va.: Security Press, 1981), p. 307. Robertson was Chief Actuary of the Social Security Administration from 1975 to 1978.

APPENDIX 1
CASE STUDIES

Case Study 1

African–American Low-Income Single Males Born in 1976 and 2026

Chart 1A   Greater Retirement Net Wealth for Third-Generation Household That Fully Invests Bequest
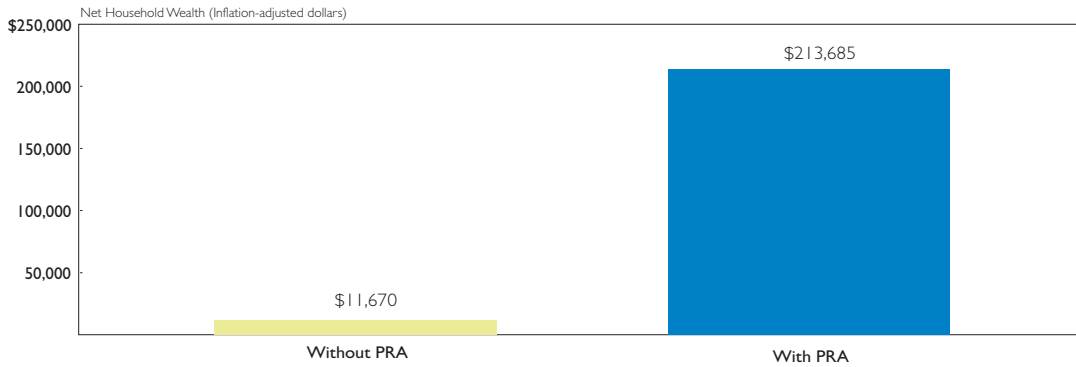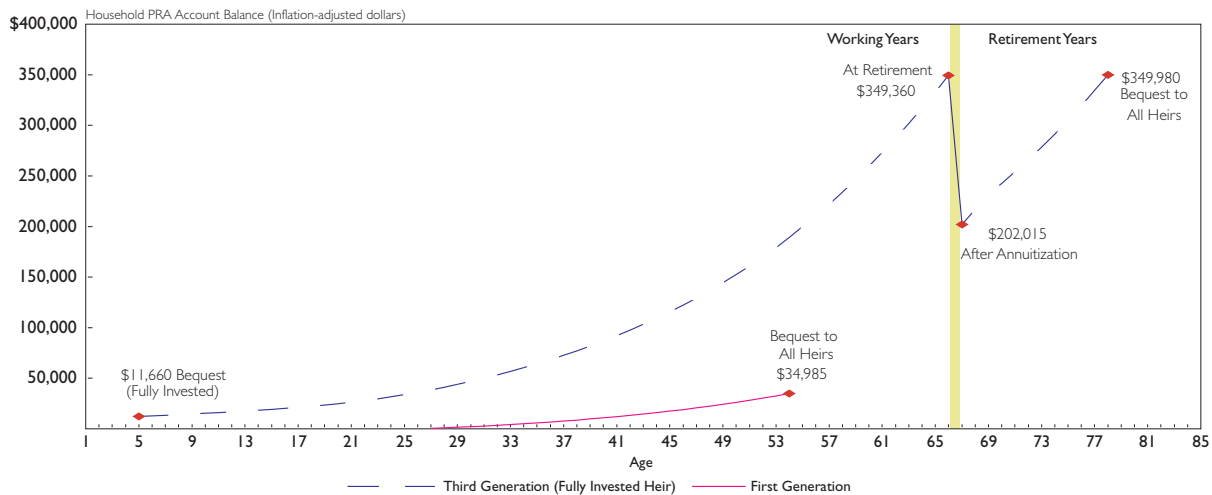
Net Household Wealth (Inflation-adjusted dollars)

Without PRA	$11,670
With PRA	$213,685

Table 1   Third Generation Enjoys Greater Retirement Options

	First Generation				Third Generation (Fully Invested Heir)				
	Monthly Social Security Benefits				Monthly Social Security Benefits			Additional Retirement Options	
Retirement Benefit Plan	Part A Government Paid	Part B PRA Annuity	Total	Bequest to Each of Three Heirs	Part A Government Paid	Part B PRA Annuity	Total	Nest Egg at Retirement	Bequest to Future Generation
Current law	n/a	n/a	n/a	n/a	$910	n/a	$910	n/a	n/a
Sample reform plan:									
• Third generation chooses to maximize monthly income	n/a	n/a	n/a	11,660	415	2,425	2,840	n/a	n/a
• Third generation chooses to maximize nest egg or bequest	n/a	n/a	n/a	11,660	415	1,025	1,440	202,015	349,980

Chart 1B   Bequest from First Generation Helps Build Third-Generation Wealth

Growth of Household PRA over Lifetime

Household PRA Account Balance (Inflation-adjusted dollars)

Working Years   Retirement Years

At Retirement $349,360

$349,980 Bequest to All Heirs

$202,015 After Annuitization

Bequest to All Heirs $34,985

$11,660 Bequest (Fully Invested)

Age

— — Third Generation (Fully Invested Heir)   —— First Generation

Sources: Economic projections are from Social Security Administration (SSA) Intermediate Assumptions from the 2002 OASDI Trustees Report and extended through 2100 by holding average annual growth rates (2038–2080) constant. Income categories are calculated using SSA formulas. Earnings profiles are projected based on age, race, and gender data in the Census 2000 Supplementary Survey (with adjustments for cases with specified occupations). Life expectancies are based on data from the Centers for Disease Control and Prevention. Current law benefits use existing formulas, but are reduced to account for projected trust fund shortfalls. Non-PRA wealth is based on ratios of assets to income as calculated from the Survey of Income and Program Participation.

Note: Sample reform plan is a composite of various proposals and not an official Heritage proposal. Dollar amounts are in 2002 dollars (inflation-adjusted). Details may not sum to total due to rounding to the nearest $5. Total benefits under the sample reform plan equal Social Security benefits under current law (assuming revenue increases) or 200 percent of the poverty threshold for singles (300 percent of the single threshold for married couples), whichever is less. The government-financed portion of Social Security (Part A) pays between 89 percent and 29 percent of total benefits for certain low-income workers (between 93 percent and 53 percent for single-earning couples) depending on birth year. The annuity-financed portion (Part B) funds the remaining amount. The personal retirement account (PRA) is first used to purchase an annuity with monthly benefits that, when added to the government-financed benefits, equals total benefits. However, the remaining balance in the PRA can be used to purchase a larger annuity. Annuity prices are calculated by following the methods used by the federal government's Thrift Savings Plan (TSP) as of June 2003. PRA contributions are based on a percentage of covered wages, beginning with 7 percent for the first $1 of covered wages and ending at 2.5 percent for the maximum subject to Social Security taxes. The PRA is invested in indexed funds with an assumed 4.7 percent inflation-adjusted rate of return, net of administrative fees. See the accompanying report and appendixes for additional information.

Case Study 2
African–American Low-Income Single Females Born in 1968 and 2018

Chart 2A **Greater Retirement Net Wealth for Third-Generation Household That Fully Invests Bequest**
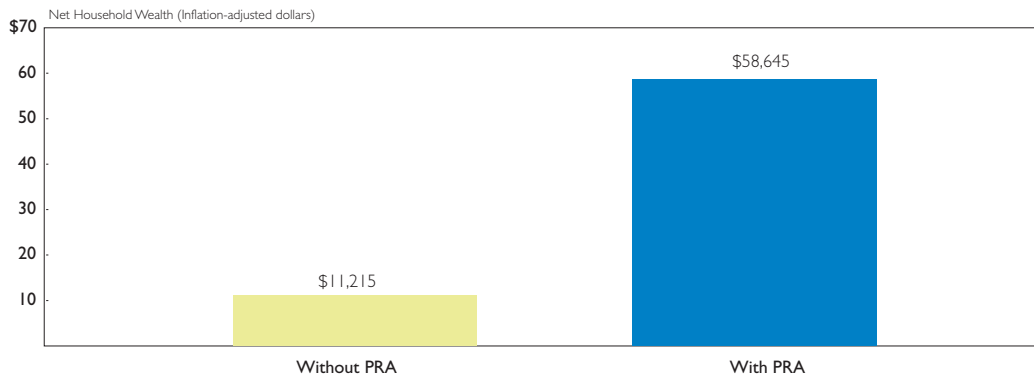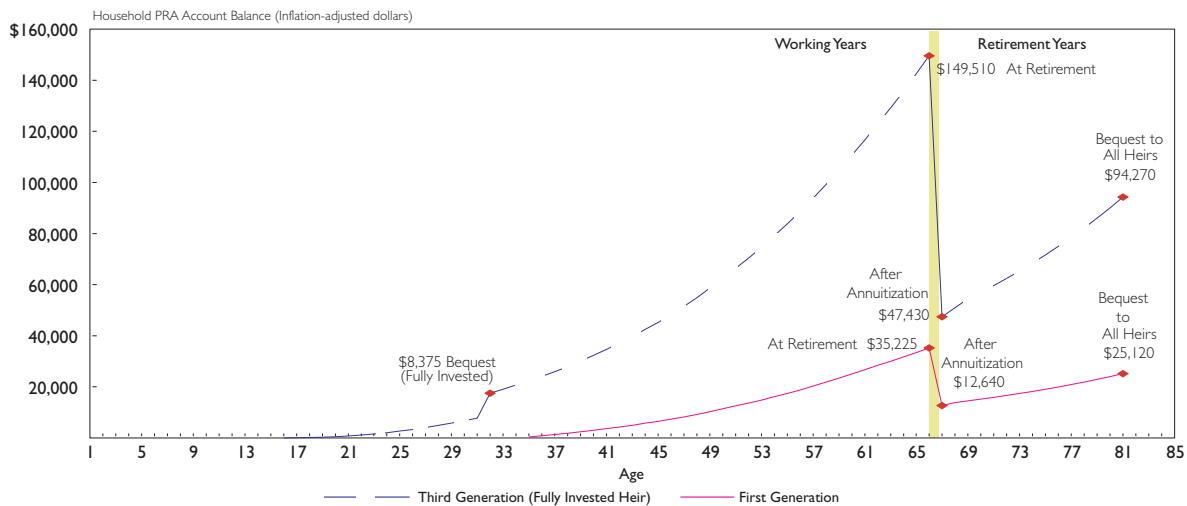
Net Household Wealth (Inflation-adjusted dollars)

Without PRA: $11,215
With PRA: $58,645

Table 2 **Third Generation Enjoys Greater Retirement Options**

Retirement Benefit Plan	First Generation				Third Generation (Fully Invested Heir)				
	Monthly Social Security Benefits			Bequest to Each of Three Heirs	Monthly Social Security Benefits			Additional Retirement Options	
	Part A Government Paid	Part B PRA Annuity	Total		Part A Government Paid	Part B PRA Annuity	Total	Nest Egg at Retirement	Bequest to Future Generation
Current law	$555	n/a	$555	n/a	$695	n/a	$695	n/a	n/a
Sample reform plan:									
• Third generation chooses to maximize monthly income	485	155	640	8,375	385	1,040	1,425	n/a	n/a
• Third generation chooses to maximize nest egg or bequest	485	155	640	8,375	385	710	1,095	47,430	94,270

Chart 2B **Bequest from First Generation Helps Build Third-Generation Wealth**
Growth of Household PRA over Lifetime

Sources: Economic projections are from Social Security Administration (SSA) Intermediate Assumptions from the 2002 OASDI Trustees Report and extended through 2100 by holding average annual growth rates (2038–2080) constant. Income categories are calculated using SSA formulas. Earnings profiles are projected based on age, race, and gender data in the Census 2000 Supplementary Survey (with adjustments for cases with specified occupations). Life expectancies are based on data from the Centers for Disease Control and Prevention. Current law benefits use existing formulas, but are reduced to account for projected trust fund shortfalls. Non-PRA wealth is based on ratios of assets to income as calculated from the Survey of Income and Program Participation.

Note: Sample reform plan is a composite of various proposals and not an official Heritage proposal. Dollar amounts are in 2002 dollars (inflation-adjusted). Details may not sum to total due to rounding to the nearest $5. Total benefits under the sample reform plan equal Social Security benefits under current law (assuming revenue increases) or 200 percent of the poverty threshold for singles (300 percent of the single threshold for married couples), whichever is less. The government-financed portion of Social Security (Part A) pays between 89 percent and 29 percent of total benefits for certain low-income workers (between 93 percent and 53 percent for single-earning couples) depending on birth year. The annuity-financed portion (Part B) funds the remaining amount. The personal retirement account (PRA) is first used to purchase an annuity with monthly benefits that, when added to the government-financed benefits, equals total benefits. However, the remaining balance in the PRA can be used to purchase a larger annuity. Annuity prices are calculated by following the methods used by the federal government's Thrift Savings Plan (TSP) as of June 2003. PRA contributions are based on a percentage of covered wages, beginning with 7 percent for the first $1 of covered wages and ending at 2.5 percent for the maximum subject to Social Security taxes. The PRA is invested in indexed funds with an assumed 4.7 percent inflation-adjusted rate of return, net of administrative fees. See the accompanying report and appendixes for additional information.

Case Study 3
African–American Low-Income Dual-Earner Couples Born in 1968 and 2018

Chart 3A   **Greater Retirement Net Wealth for Third-Generation Household That Fully Invests Bequest**

Net Household Wealth (Inflation-adjusted dollars)

- Without PRA: $13,895
- With PRA: $105,295
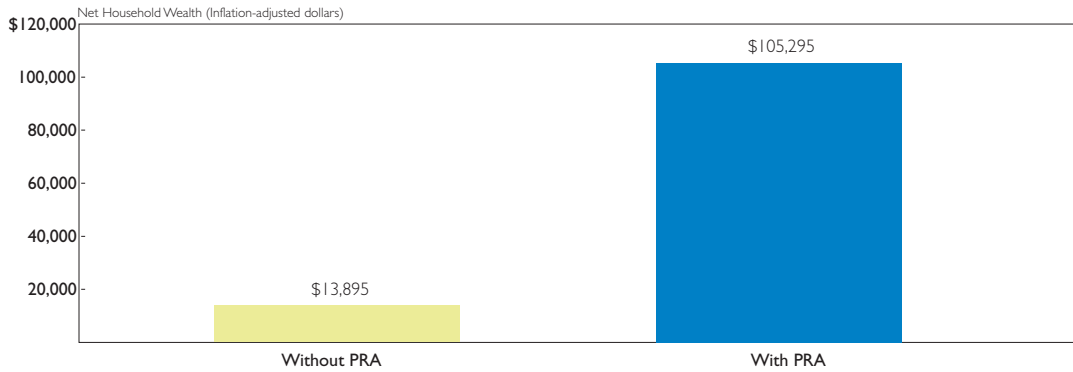
Table 3   **Third Generation Enjoys Greater Retirement Options**

	First Generation				Third Generation (Fully Invested Heir)				
	Monthly Social Security Benefits				Monthly Social Security Benefits			Additional Retirement Options	
Retirement Benefit Plan	Part A Government Paid	Part B PRA Annuity	Total	Bequest to Each of Three Heirs	Part A Government Paid	Part B PRA Annuity	Total	Nest Egg at Retirement	Bequest to Future Generation
Current law	$1,235	n/a	$1,235	n/a	$1,550	n/a	$1,550	n/a	n/a
Sample reform plan:									
• Third generation chooses to maximize monthly income	1,015	410	1,430	12,330	770	1,980	2,750	n/a	n/a
• Third generation chooses to maximize nest egg or bequest	1,015	410	1,430	12,330	770	1,390	2,155	91,400	181,670

Bequest from First Generation Helps Build Third-Generation Wealth

Chart 3B   Growth of Household PRA over Lifetime

Household PRA Account Balance (Inflation-adjusted dollars)

Working Years / Retirement Years

At Retirement $306,880
Bequest to All Heirs $181,670
At Retirement $82,545
$91,400 After Annuitization
Bequest to All Heirs $36,995
$12,330 Bequest (Fully Invested)
$18,615 After Annuitization

Age

Third Generation (Fully Invested Heir) — First Generation

Sources: Economic projections are from Social Security Administration (SSA) Intermediate Assumptions from the 2002 OASDI Trustees Report and extended through 2100 by holding average annual growth rates (2038–2080) constant. Income categories are calculated using SSA formulas. Earnings profiles are projected based on age, race, and gender data in the Census 2000 Supplementary Survey (with adjustments for cases with specified occupations). Life expectancies are based on data from the Centers for Disease Control and Prevention. Current law benefits use existing formulas, but are reduced to account for projected trust fund shortfalls. Non-PRA wealth is based on ratios of assets to income as calculated from the Survey of Income and Program Participation.

Note: Sample reform plan is a composite of various proposals and not an official Heritage proposal. Dollar amounts are in 2002 dollars (inflation-adjusted). Details may not sum to total due to rounding to the nearest $5. Total benefits under the sample reform plan equal Social Security benefits under current law (assuming revenue increases) or 200 percent of the poverty threshold for singles (300 percent of the single threshold for married couples), whichever is less. The government-financed portion of Social Security (Part A) pays between 89 percent and 29 percent of total benefits for certain low-income workers (between 93 percent and 53 percent for single-earning couples) depending on birth year. The annuity-financed portion (Part B) funds the remaining amount. The personal retirement account (PRA) is first used to purchase an annuity with monthly benefits that, when added to the government-financed benefits, equals total benefits. However, the remaining balance in the PRA can be used to purchase a larger annuity. Annuity prices are calculated by following the methods used by the federal government's Thrift Savings Plan (TSP) as of June 2003. PRA contributions are based on a percentage of covered wages, beginning with 7 percent for the first $1 of covered wages and ending at 2.5 percent for the maximum subject to Social Security taxes. The PRA is invested in indexed funds with an assumed 4.7 percent inflation-adjusted rate of return, net of administrative fees. See the accompanying report and appendixes for additional information.

Case Study 4
Hispanic Average- and Low-Income Dual-Earner Couples Born in 1968 and 2018

Chart 4A   **Greater Retirement Net Wealth for Third-Generation Household That Fully Invests Bequest**
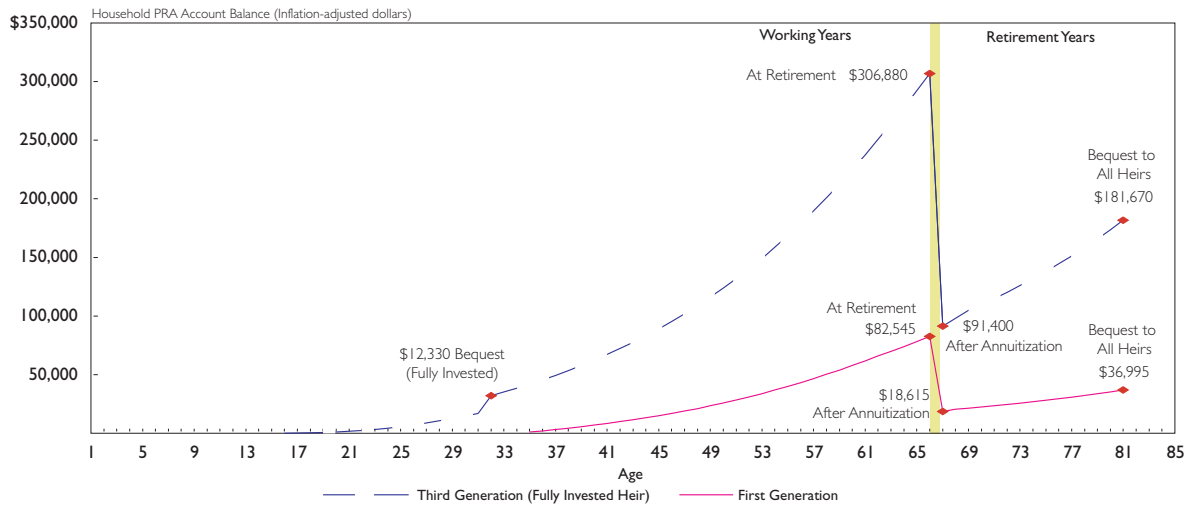
Net Household Wealth (Inflation-adjusted dollars)

$501,680

$48,640

Without PRA   With PRA

Table 4   **Third Generation Enjoys Greater Retirement Options**

Retirement Benefit Plan	First Generation				Third Generation (Fully Invested Heir)				
	Monthly Social Security Benefits				Monthly Social Security Benefits			Additional Retirement Options	
	Part A Government Paid	Part B PRA Annuity	Total	Bequest to Each of Three Heirs	Part A Government Paid	Part B PRA Annuity	Total	Nest Egg at Retirement	Bequest to Future Generation
Current law	$1,535	n/a	$1,535	n/a	$1,930	n/a	$1,930	n/a	n/a
Sample reform plan:									
• Third generation chooses to maximize monthly income	1,230	465	1,695	39,850	1,285	3,730	5,015	n/a	n/a
• Third generation chooses to maximize nest egg or bequest	1,230	465	1,695	39,850	1,285	810	2,095	453,040	986,815

Chart 4B   **Bequest from First Generation Helps Build Third-Generation Wealth**
Growth of Household PRA over Lifetime

Household PRA Account Balance (Inflation-adjusted dollars)

Working Years | Retirement Years

Bequest to All Heirs $986,815

At Retirement $578,885

$453,040 After Annuitization

$39,850 Bequest (Fully Invested)

At Retirement $127,070

After Annuitization $54,885

Bequest to All Heirs $119,550

Age

— — Third Generation (Fully Invested Heir)   —— First Generation

Sources: Economic projections are from Social Security Administration (SSA) Intermediate Assumptions from the 2002 OASDI Trustees Report and extended through 2100 by holding average annual growth rates (2038–2080) constant. Income categories are calculated using SSA formulas. Earnings profiles are projected based on age, race, and gender data in the Census 2000 Supplementary Survey (with adjustments for cases with specified occupations). Life expectancies are based on data from the Centers for Disease Control and Prevention. Current law benefits use existing formulas, but are reduced to account for projected trust fund shortfalls. Non-PRA wealth is based on ratios of assets to income as calculated from the Survey of Income and Program Participation.

Note: Sample reform plan is a composite of various proposals and not an official Heritage proposal. Dollar amounts are in 2002 dollars (inflation-adjusted). Details may not sum to total due to rounding to the nearest $5. Total benefits under the sample reform plan equal Social Security benefits under current law (assuming revenue increases) or 200 percent of the poverty threshold for singles (300 percent of the single threshold for married couples), whichever is less. The government-financed portion of Social Security (Part A) pays between 89 percent and 29 percent of total benefits for certain low-income workers (between 93 percent and 53 percent for single-earning couples) depending on birth year. The annuity-financed portion (Part B) funds the remaining amount. The personal retirement account (PRA) is first used to purchase an annuity with monthly benefits that, when added to the government-financed benefits, equals total benefits. However, the remaining balance in the PRA can be used to purchase a larger annuity. Annuity prices are calculated by following the methods used by the federal government's Thrift Savings Plan (TSP) as of June 2003. PRA contributions are based on a percentage of covered wages, beginning with 7 percent for the first $1 of covered wages and ending at 2.5 percent for the maximum subject to Social Security taxes. The PRA is invested in indexed funds with an assumed 4.7 percent inflation-adjusted rate of return, net of administrative fees. See the accompanying report and appendixes for additional information.

Case Study 5

Hispanic Average-Income Single-Earner Couples Born in 1973 and 2023

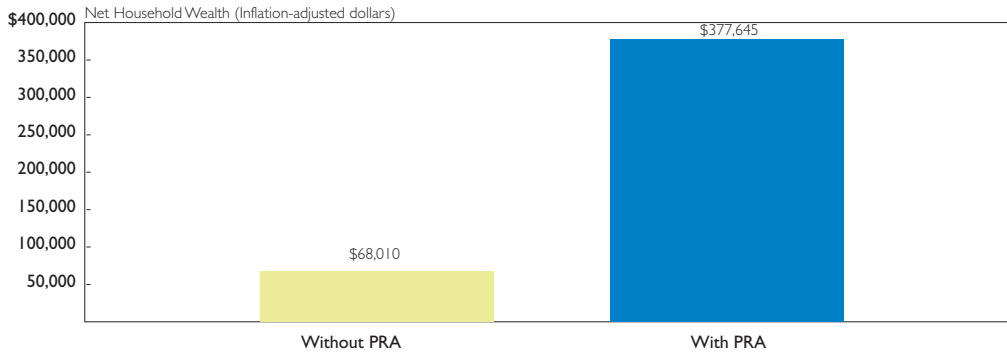**Chart 5A**   **Greater Retirement Net Wealth for Third-Generation Household That Fully Invests Bequest**

Net Household Wealth (Inflation-adjusted dollars)

Without PRA: $68,010
With PRA: $377,645

Table 5   **Third Generation Enjoys Greater Retirement Options**

	First Generation				Third Generation (Fully Invested Heir)				
	Monthly Social Security Benefits				Monthly Social Security Benefits			Additional Retirement Options	
Retirement Benefit Plan	Part A Government Paid	Part B PRA Annuity	Total	Bequest to Each of Three Heirs	Part A Government Paid	Part B PRA Annuity	Total	Nest Egg at Retirement	Bequest to Future Generation
Current law	$1,450	n/a	$1,450	n/a	$2,000	n/a	$2,000	n/a	n/a
Sample reform plan:									
• Third generation chooses to maximize monthly income	1,075	630	1,705	24,120	1,330	2,815	4,145	n/a	n/a
• Third generation chooses to maximize nest egg or bequest	1,075	630	1,705	24,120	1,330	820	2,150	309,640	674,460

Chart 5B   **Bequest from First Generation Helps Build Third-Generation Wealth**
Growth of Household PRA over Lifetime

Household PRA Account Balance (Inflation-adjusted dollars)

Working Years / Retirement Years

Bequest to All Heirs $674,460

At Retirement $436,955
$309,640 After Annuitization

$24,120 Bequest (Fully Invested)

At Retirement $131,145

Bequest to All Heirs $72,365

After Annuitization $33,225

Age

Third Generation (Fully Invested Heir) — First Generation

Sources: Economic projections are from Social Security Administration (SSA) Intermediate Assumptions from the 2002 OASDI Trustees Report and extended through 2100 by holding average annual growth rates (2038–2080) constant. Income categories are calculated using SSA formulas. Earnings profiles are projected based on age, race, and gender data in the Census 2000 Supplementary Survey (with adjustments for cases with specified occupations). Life expectancies are based on data from the Centers for Disease Control and Prevention. Current law benefits use existing formulas, but are reduced to account for projected trust fund shortfalls. Non-PRA wealth is based on ratios of assets to income as calculated from the Survey of Income and Program Participation.

Note: Sample reform plan is a composite of various proposals and not an official Heritage proposal. Dollar amounts are in 2002 dollars (inflation-adjusted). Details may not sum to total due to rounding to the nearest $5. Total benefits under the sample reform plan equal Social Security benefits under current law (assuming revenue increases) or 200 percent of the poverty threshold for singles (300 percent of the single threshold for married couples), whichever is less. The government-financed portion of Social Security (Part A) pays between 89 percent and 29 percent of total benefits for certain low-income workers (between 93 percent and 53 percent for single-earning couples) depending on birth year. The annuity-financed portion (Part B) funds the remaining amount. The personal retirement account (PRA) is first used to purchase an annuity with monthly benefits that, when added to the government-financed benefits, equals total benefits. However, the remaining balance in the PRA can be used to purchase a larger annuity. Annuity prices are calculated by following the methods used by the federal government's Thrift Savings Plan (TSP) as of June 2003. PRA contributions are based on a percentage of covered wages, beginning with 7 percent for the first $1 of covered wages and ending at 2.5 percent for the maximum subject to Social Security taxes. The PRA is invested in indexed funds with an assumed 4.7 percent inflation-adjusted rate of return, net of administrative fees. See the accompanying report and appendixes for additional information.

Case Study 6

White Average-Income Single Females Born in 1960 and 2010

Chart 6A   **Greater Retirement Net Wealth for Third-Generation Household That Fully Invests Bequest**
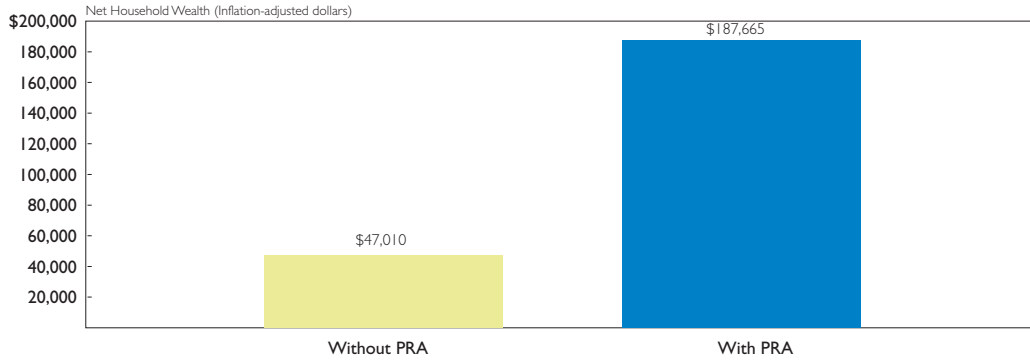
Net Household Wealth (Inflation-adjusted dollars)

$187,665 (With PRA)

$47,010 (Without PRA)

Table 6   **Third Generation Enjoys Greater Retirement Options**

Retirement Benefit Plan	First Generation				Third Generation (Fully Invested Heir)				
	Monthly Social Security Benefits				Monthly Social Security Benefits			Additional Retirement Options	
	Part A Government Paid	Part B PRA Annuity	Total	Bequest to Each of Three Heirs	Part A Government Paid	Part B PRA Annuity	Total	Nest Egg at Retirement	Bequest to Future Generation
Current law	$1,015	n/a	$1,015	n/a	$1,165	n/a	$1,165	n/a	n/a
Sample reform plan:									
• Third generation chooses to maximize monthly income	715	335	1,045	4,325	415	1,995	2,410	n/a	n/a
• Third generation chooses to maximize nest egg or bequest	715	335	1,045	4,325	415	1,020	1,440	140,655	306,380

Chart 6B   **Bequest from First Generation Helps Build Third-Generation Wealth**
Growth of Household PRA over Lifetime

Household PRA Account Balance (Inflation-adjusted dollars)

Working Years / Retirement Years

At Retirement $287,955
$140,655 After Annuitization
Bequest to All Heirs $306,380

$4,325 Bequest (Fully Invested)
At Retirement $53,990
After Annuitization $5,960
Bequest to All Heirs $12,980

Legend: Third Generation (Fully Invested Heir) / First Generation

Age axis: 1, 5, 9, 13, 17, 21, 25, 29, 33, 37, 41, 45, 49, 53, 57, 61, 65, 69, 73, 77, 81, 85

Sources: Economic projections are from Social Security Administration (SSA) Intermediate Assumptions from the 2002 OASDI Trustees Report and extended through 2100 by holding average annual growth rates (2038–2080) constant. Income categories are calculated using SSA formulas. Earnings profiles are projected based on age, race, and gender data in the Census 2000 Supplementary Survey (with adjustments for cases with specified occupations). Life expectancies are based on data from the Centers for Disease Control and Prevention. Current law benefits use existing formulas, but are reduced to account for projected trust fund shortfalls. Non-PRA wealth is based on ratios of assets to income as calculated from the Survey of Income and Program Participation.

Note: Sample reform plan is a composite of various proposals and not an official Heritage proposal. Dollar amounts are in 2002 dollars (inflation-adjusted). Details may not sum to total due to rounding to the nearest $5. Total benefits under the sample reform plan equal Social Security benefits under current law (assuming revenue increases) or 200 percent of the poverty threshold for singles (300 percent of the single threshold for married couples), whichever is less. The government-financed portion of Social Security (Part A) pays between 89 percent and 29 percent of total benefits for certain low-income workers (between 93 percent and 53 percent for single-earning couples) depending on birth year. The annuity-financed portion (Part B) funds the remaining amount. The personal retirement account (PRA) is first used to purchase an annuity with monthly benefits that, when added to the government-financed benefits, equals total benefits. However, the remaining balance in the PRA can be used to purchase a larger annuity. Annuity prices are calculated by following the methods used by the federal government's Thrift Savings Plan (TSP) as of June 2003. PRA contributions are based on a percentage of covered wages, beginning with 7 percent for the first $1 of covered wages and ending at 2.5 percent for the maximum subject to Social Security taxes. The PRA is invested in indexed funds with an assumed 4.7 percent inflation-adjusted rate of return, net of administrative fees. See the accompanying report and appendixes for additional information.

Case Study 7

African–American Average-Income Dual-Earner Couples Born in 1968 and 2018

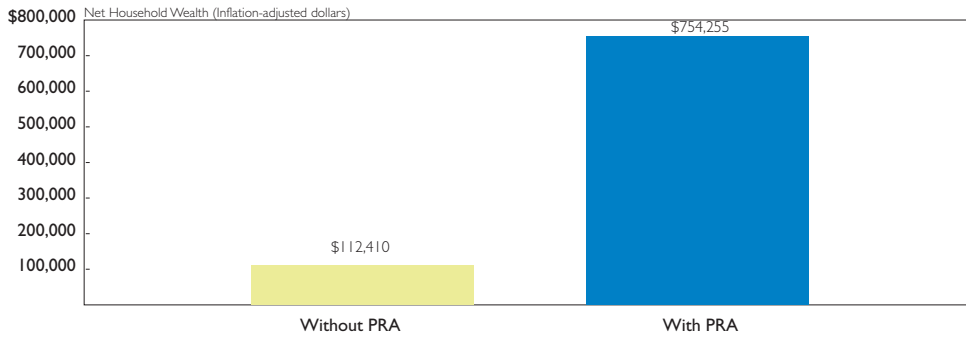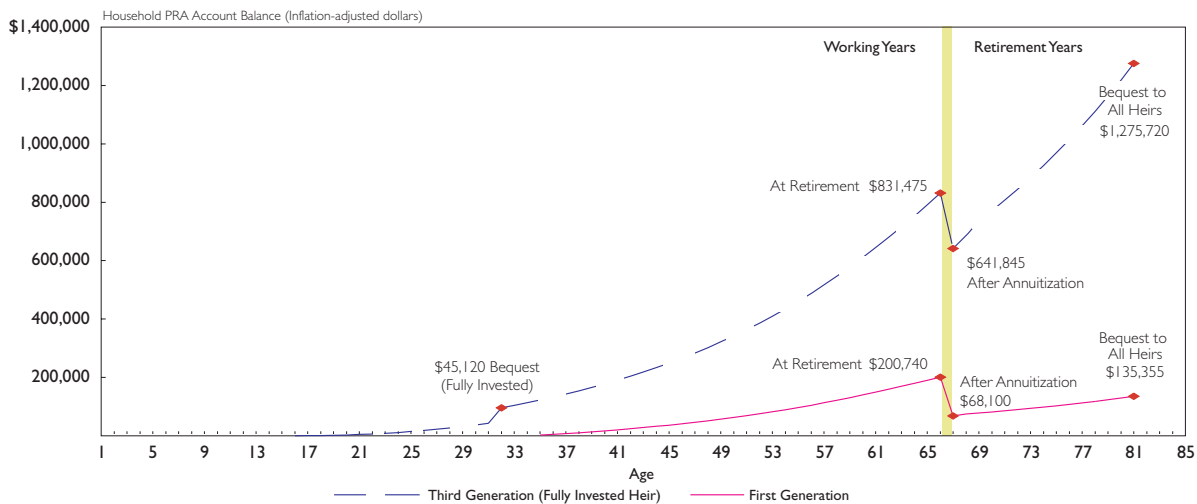**Chart 7A**   **Greater Retirement Net Wealth for Third-Generation Household That Fully Invests Bequest**

Net Household Wealth (Inflation-adjusted dollars)

- Without PRA: $112,410
- With PRA: $754,255

Table 7   **Third Generation Enjoys Greater Retirement Options**

| | First Generation | | | | Third Generation (Fully Invested Heir) | | | | |
| | Monthly Social Security Benefits | | | | Monthly Social Security Benefits | | | Additional Retirement Options | |
Retirement Benefit Plan	Part A Government Paid	Part B PRA Annuity	Total	Bequest to Each of Three Heirs	Part A Government Paid	Part B PRA Annuity	Total	Nest Egg at Retirement	Bequest to Future Generation
Current law	$2,095	n/a	$2,095	n/a	$2,630	n/a	$2,630	n/a	n/a
Sample reform plan:									
•Third generation chooses to maximize monthly income	1,300	855	2,155	45,120	935	5,365	6,300	n/a	n/a
•Third generation chooses to maximize nest egg or bequest	1,300	855	2,155	45,120	935	1,225	2,155	641,845	1,275,720

Chart 7B   **Bequest from First Generation Helps Build Third-Generation Wealth**

Growth of Household PRA over Lifetime

Household PRA Account Balance (Inflation-adjusted dollars)

Working Years | Retirement Years

Third Generation (Fully Invested Heir):
- $45,120 Bequest (Fully Invested)
- At Retirement $831,475
- $641,845 After Annuitization
- Bequest to All Heirs $1,275,720

First Generation:
- At Retirement $200,740
- After Annuitization $68,100
- Bequest to All Heirs $135,355

Age (1 to 85)

—— Third Generation (Fully Invested Heir)   —— First Generation

Sources: Economic projections are from Social Security Administration (SSA) Intermediate Assumptions from the 2002 OASDI Trustees Report and extended through 2100 by holding average annual growth rates (2038–2080) constant. Income categories are calculated using SSA formulas. Earnings profiles are projected based on age, race, and gender data in the Census 2000 Supplementary Survey (with adjustments for cases with specified occupations). Life expectancies are based on data from the Centers for Disease Control and Prevention. Current law benefits use existing formulas, but are reduced to account for projected trust fund shortfalls. Non-PRA wealth is based on ratios of assets to income as calculated from the Survey of Income and Program Participation.

Note: Sample reform plan is a composite of various proposals and not an official Heritage proposal. Dollar amounts are in 2002 dollars (inflation-adjusted). Details may not sum to total due to rounding to the nearest $5. Total benefits under the sample reform plan equal Social Security benefits under current law (assuming revenue increases) or 200 percent of the poverty threshold for singles (300 percent of the single threshold for married couples), whichever is less. The government-financed portion of Social Security (Part A) pays between 89 percent and 29 percent of total benefits for certain low-income workers (between 93 percent and 53 percent for single-earning couples) depending on birth year. The annuity-financed portion (Part B) funds the remaining amount. The personal retirement account (PRA) is first used to purchase an annuity with monthly benefits that, when added to the government-financed benefits, equals total benefits. However, the remaining balance in the PRA can be used to purchase a larger annuity. Annuity prices are calculated by following the methods used by the federal government's Thrift Savings Plan (TSP) as of June 2003. PRA contributions are based on a percentage of covered wages, beginning with 7 percent for the first $1 of covered wages and ending at 2.5 percent for the maximum subject to Social Security taxes. The PRA is invested in indexed funds with an assumed 4.7 percent inflation-adjusted rate of return, net of administrative fees. See the accompanying report and appendixes for additional information.

Case Study 8

White Average-Income Single-Earner Couples Born in 1968 and 2018

Chart 8A **Greater Retirement Net Wealth for Third-Generation Household That Fully Invests Bequest**
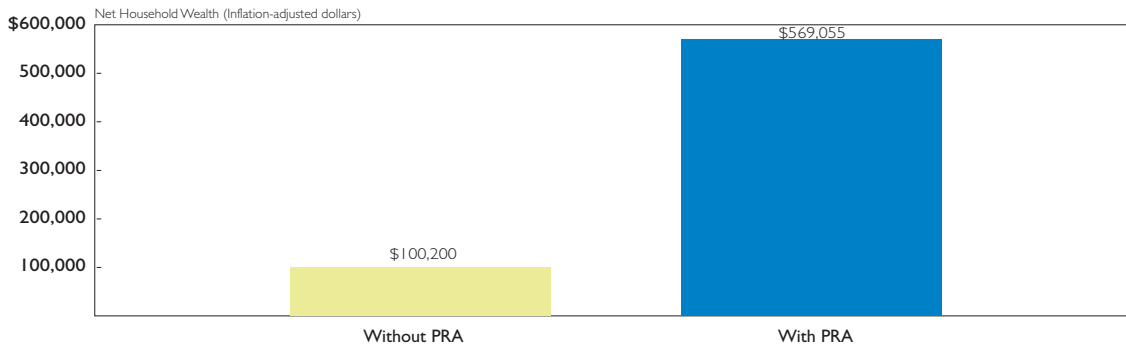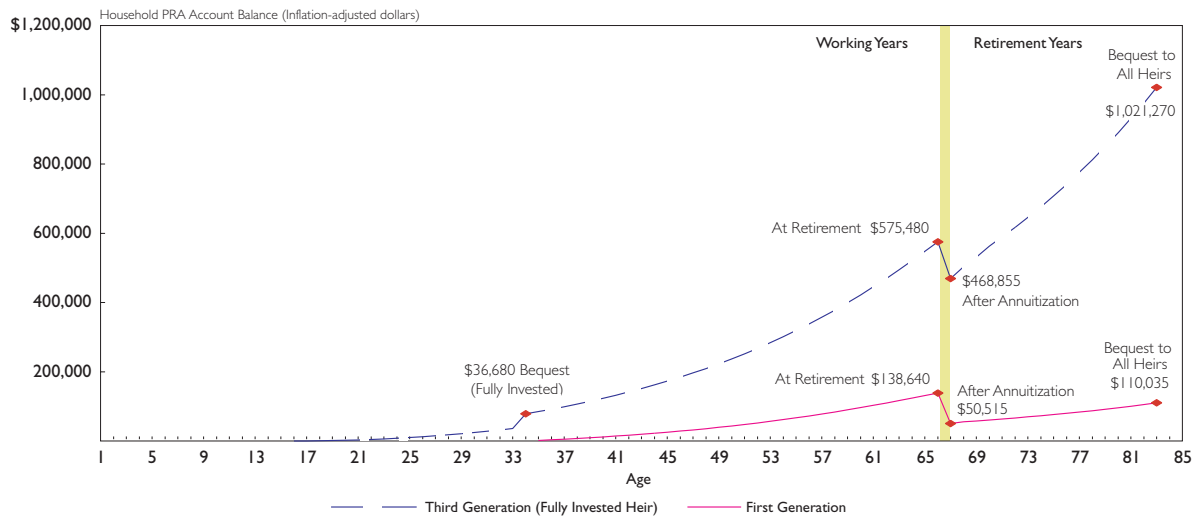
Net Household Wealth (Inflation-adjusted dollars)

Bar chart:
- Without PRA: $100,200
- With PRA: $569,055

Y-axis: $600,000; 500,000; 400,000; 300,000; 200,000; 100,000

Table 8 **Third Generation Enjoys Greater Retirement Options**

Retirement Benefit Plan	First Generation				Third Generation (Fully Invested Heir)				
	Monthly Social Security Benefits				Monthly Social Security Benefits			Additional Retirement Options	
	Part A Government Paid	Part B PRA Annuity	Total	Bequest to Each of Three Heirs	Part A Government Paid	Part B PRA Annuity	Total	Nest Egg at Retirement	Bequest to Future Generation
Current law	$2,000	n/a	$2,000	n/a	$2,550	n/a	$2,550	n/a	n/a
Sample reform plan:									
• Third generation chooses to maximize monthly income	1,295	570	1,865	36,680	1,470	3,710	5,180	n/a	n/a
• Third generation chooses to maximize nest egg or bequest	1,295	570	1,865	36,680	1,470	685	2,155	468,855	1,021,270

Chart 8B **Bequest from First Generation Helps Build Third-Generation Wealth**

Growth of Household PRA over Lifetime

Household PRA Account Balance (Inflation-adjusted dollars)

Line chart showing:
- Working Years / Retirement Years
- Bequest to All Heirs $1,021,270
- At Retirement $575,480
- $468,855 After Annuitization
- $36,680 Bequest (Fully Invested)
- At Retirement $138,640
- After Annuitization $50,515
- Bequest to All Heirs $110,035

Y-axis: $1,200,000; 1,000,000; 800,000; 600,000; 400,000; 200,000
X-axis: Age 1, 5, 9, 13, 17, 21, 25, 29, 33, 37, 41, 45, 49, 53, 57, 61, 65, 69, 73, 77, 81, 85

Legend: Third Generation (Fully Invested Heir) ---- ; First Generation ——

Sources: Economic projections are from Social Security Administration (SSA) Intermediate Assumptions from the 2002 OASDI Trustees Report and extended through 2100 by holding average annual growth rates (2038–2080) constant. Income categories are calculated using SSA formulas. Earnings profiles are projected based on age, race, and gender data in the Census 2000 Supplementary Survey (with adjustments for cases with specified occupations). Life expectancies are based on data from the Centers for Disease Control and Prevention. Current law benefits use existing formulas, but are reduced to account for projected trust fund shortfalls. Non-PRA wealth is based on ratios of assets to income as calculated from the Survey of Income and Program Participation.

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Case Study 9

White Average-Income Dual-Earner Couples Born in 1963 and 2013

Chart 9A   **Greater Retirement Net Wealth for Third-Generation Household That Fully Invests Bequest**
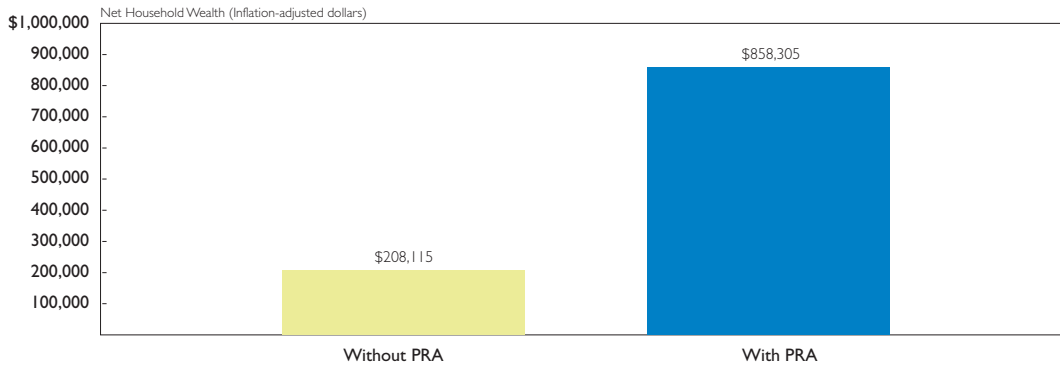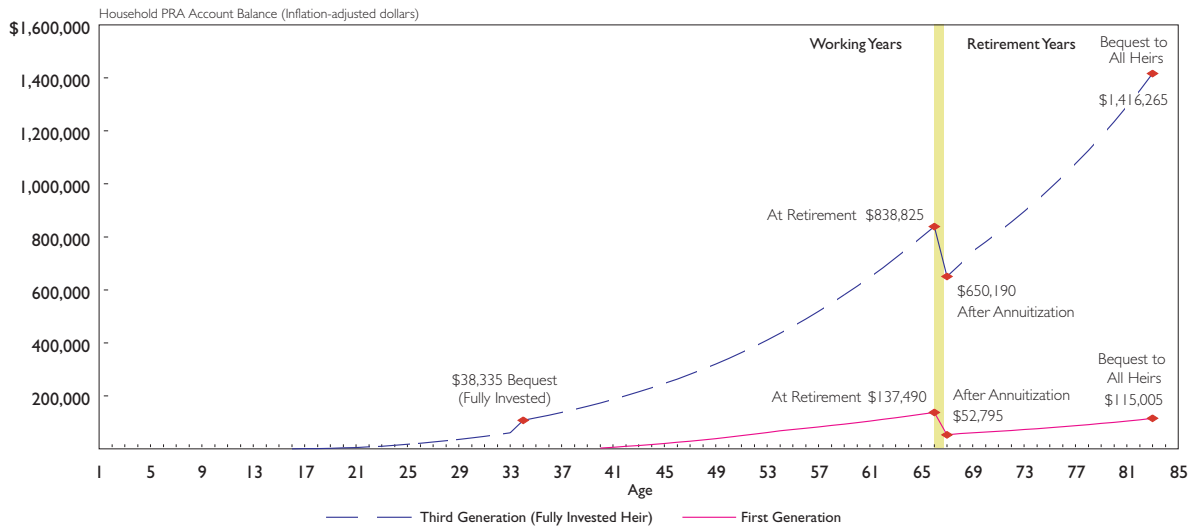

Net Household Wealth (Inflation-adjusted dollars)

Without PRA: $208,115
With PRA: $858,305

Table 9   **Third Generation Enjoys Greater Retirement Options**

	First Generation				Third Generation (Fully Invested Heir)				
	Monthly Social Security Benefits				Monthly Social Security Benefits			Additional Retirement Options	
Retirement Benefit Plan	Part A Government Paid	Part B PRA Annuity	Total	Bequest to Each of Three Heirs	Part A Government Paid	Part B PRA Annuity	Total	Nest Egg at Retirement	Bequest to Future Generation
Current law	$1,260	n/a	$1,260	n/a	$2,830	n/a	$2,830	n/a	n/a
Sample reform plan:									
• Third generation chooses to maximize monthly income	775	590	1,365	38,335	940	5,405	6,345	n/a	n/a
• Third generation chooses to maximize nest egg or bequest	775	590	1,365	38,335	940	1,215	2,155	650,190	1,416,265

Bequest from First Generation Helps Build Third-Generation Wealth

Chart 9B   **Growth of Household PRA over Lifetime**

Household PRA Account Balance (Inflation-adjusted dollars)

Working Years | Retirement Years | Bequest to All Heirs

At Retirement $838,825
$650,190 After Annuitization
$1,416,265
$38,335 Bequest (Fully Invested)
At Retirement $137,490
After Annuitization $52,795
Bequest to All Heirs $115,005

Age

— Third Generation (Fully Invested Heir)   — First Generation

Sources: Economic projections are from Social Security Administration (SSA) Intermediate Assumptions from the 2002 OASDI Trustees Report and extended through 2100 by holding average annual growth rates (2038–2080) constant. Income categories are calculated using SSA formulas. Earnings profiles are projected based on age, race, and gender data in the Census 2000 Supplementary Survey (with adjustments for cases with specified occupations). Life expectancies are based on data from the Centers for Disease Control and Prevention. Current law benefits use existing formulas, but are reduced to account for projected trust fund shortfalls. Non-PRA wealth is based on ratios of assets to income as calculated from the Survey of Income and Program Participation.

Note: Sample reform plan is a composite of various proposals and not an official Heritage proposal. Dollar amounts are in 2002 dollars (inflation-adjusted). Details may not sum to total due to rounding to the nearest $5. Total benefits under the sample reform plan equal Social Security benefits under current law (assuming revenue increases) or 200 percent of the poverty threshold for singles (300 percent of the single threshold for married couples), whichever is less. The government-financed portion of Social Security (Part A) pays between 89 percent and 29 percent of total benefits for certain low-income workers (between 93 percent and 53 percent for single-earning couples) depending on birth year. The annuity-financed portion (Part B) funds the remaining amount. The personal retirement account (PRA) is first used to purchase an annuity with monthly benefits that, when added to the government-financed benefits, equals total benefits. However, the remaining balance in the PRA can be used to purchase a larger annuity. Annuity prices are calculated by following the methods used by the federal government's Thrift Savings Plan (TSP) as of June 2003. PRA contributions are based on a percentage of covered wages, beginning with 7 percent for the first $1 of covered wages and ending at 2.5 percent for the maximum subject to Social Security taxes. The PRA is invested in indexed funds with an assumed 4.7 percent inflation-adjusted rate of return, net of administrative fees. See the accompanying report and appendixes for additional information.

Case Study 10
White Average-Income Divorced Females Born in 1960 and 2010

Chart 10A   **Greater Retirement Net Wealth for Third-Generation Household That Fully Invests Bequest**
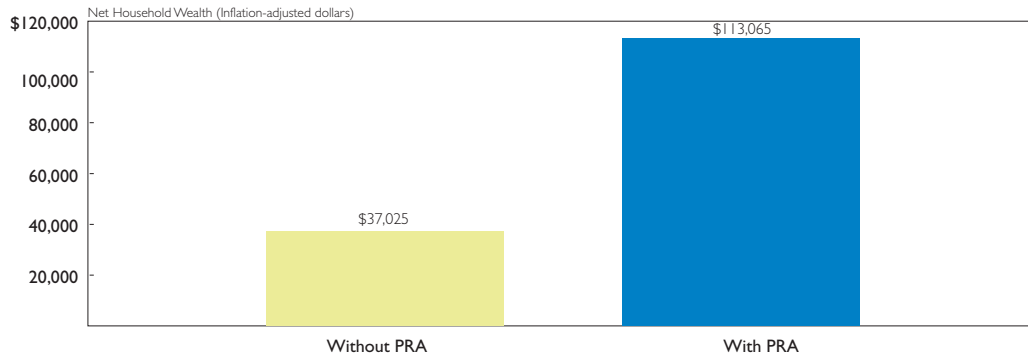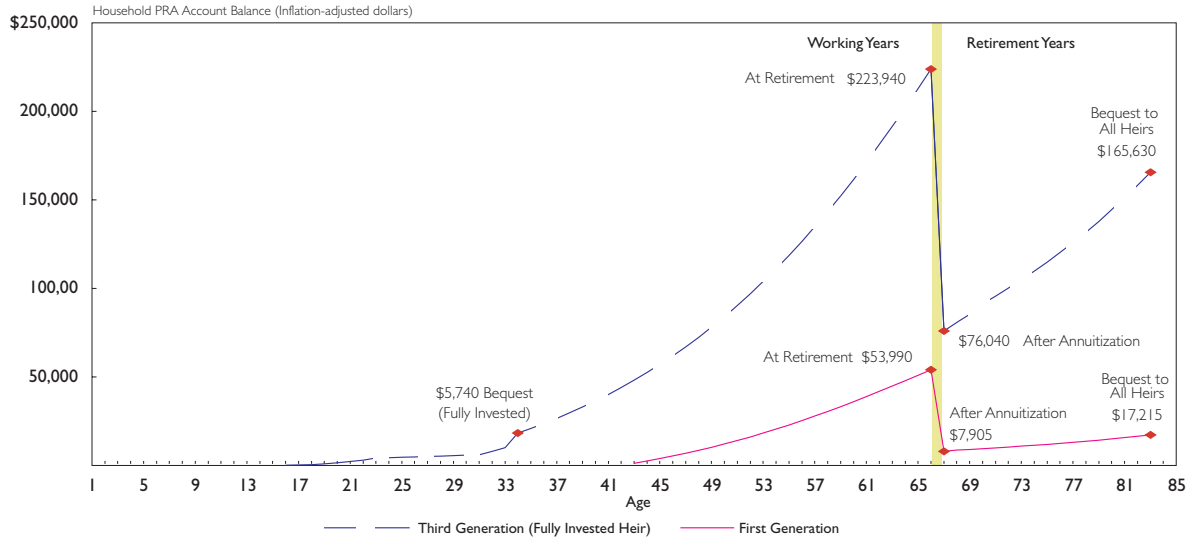
Net Household Wealth (Inflation-adjusted dollars)

Without PRA: $37,025
With PRA: $113,065

Table 10   **Third Generation Enjoys Greater Retirement Options**

Retirement Benefit Plan	First Generation				Third Generation (Fully Invested Heir)				
	Monthly Social Security Benefits				Monthly Social Security Benefits			Additional Retirement Options	
	Part A Government Paid	Part B PRA Annuity	Total	Bequest to Each of Three Heirs	Part A Government Paid	Part B PRA Annuity	Total	Nest Egg at Retirement	Bequest to Future Generation
Current law	$995	n/a	$995	n/a	$1,140	n/a	$1,140	n/a	n/a
Sample reform plan:									
• Third generation chooses to maximize monthly income	705	320	1,025	5,740	410	1,555	1,965	n/a	n/a
• Third generation chooses to maximize nest egg or bequest	705	320	1,025	5,740	410	1,025	1,440	76,040	165,630

Chart 10B   **Bequest from First Generation Helps Build Third-Generation Wealth**
Growth of Household PRA over Lifetime

Household PRA Account Balance (Inflation-adjusted dollars)

Working Years — Retirement Years

At Retirement $223,940
Bequest to All Heirs $165,630
At Retirement $53,990
$76,040 After Annuitization
$5,740 Bequest (Fully Invested)
After Annuitization $7,905
Bequest to All Heirs $17,215

Age

Legend: Third Generation (Fully Invested Heir) — First Generation

Sources: Economic projections are from Social Security Administration (SSA) Intermediate Assumptions from the 2002 OASDI Trustees Report and extended through 2100 by holding average annual growth rates (2038–2080) constant. Income categories are calculated using SSA formulas. Earnings profiles are projected based on age, race, and gender data in the Census 2000 Supplementary Survey (with adjustments for cases with specified occupations). Life expectancies are based on data from the Centers for Disease Control and Prevention. Current law benefits use existing formulas, but are reduced to account for projected trust fund shortfalls. Non-PRA wealth is based on ratios of assets to income as calculated from the Survey of Income and Program Participation.

Note: Sample reform plan is a composite of various proposals and not an official Heritage proposal. Dollar amounts are in 2002 dollars (inflation-adjusted). Details may not sum to total due to rounding to the nearest $5. Total benefits under the sample reform plan equal Social Security benefits under current law (assuming revenue increases) or 200 percent of the poverty threshold for singles (300 percent of the single threshold for married couples), whichever is less. The government-financed portion of Social Security (Part A) pays between 89 percent and 29 percent of total benefits for certain low-income workers (between 93 percent and 53 percent for single-earning couples) depending on birth year. The annuity-financed portion (Part B) funds the remaining amount. The personal retirement account (PRA) is first used to purchase an annuity with monthly benefits that, when added to the government-financed benefits, equals total benefits. However, the remaining balance in the PRA can be used to purchase a larger annuity. Annuity prices are calculated by following the methods used by the federal government's Thrift Savings Plan (TSP) as of June 2003. PRA contributions are based on a percentage of covered wages, beginning with 7 percent for the first $1 of covered wages and ending at 2.5 percent for the maximum subject to Social Security taxes. The PRA is invested in indexed funds with an assumed 4.7 percent inflation-adjusted rate of return, net of administrative fees. See the accompanying report and appendixes for additional information.

Case Study 11
Dual-Earner Average-Income Teachers Born in 1968 and 2018

Chart 11A   **Greater Retirement Net Wealth for Third-Generation Household That Fully Invests Bequest**
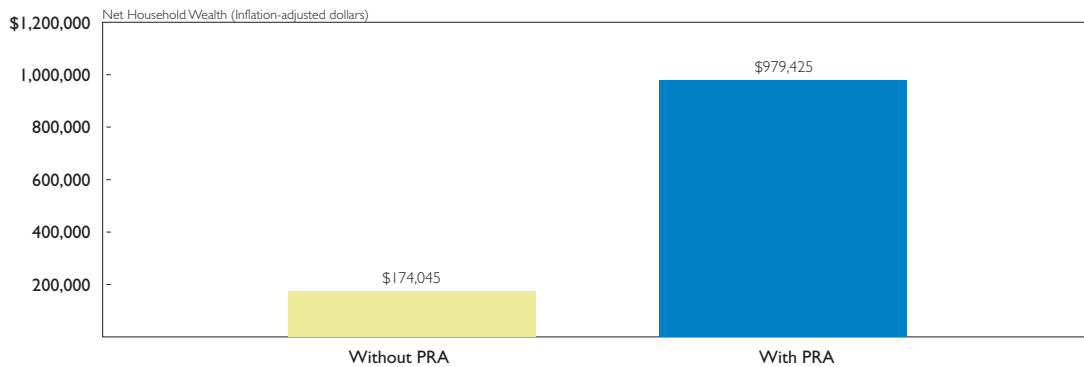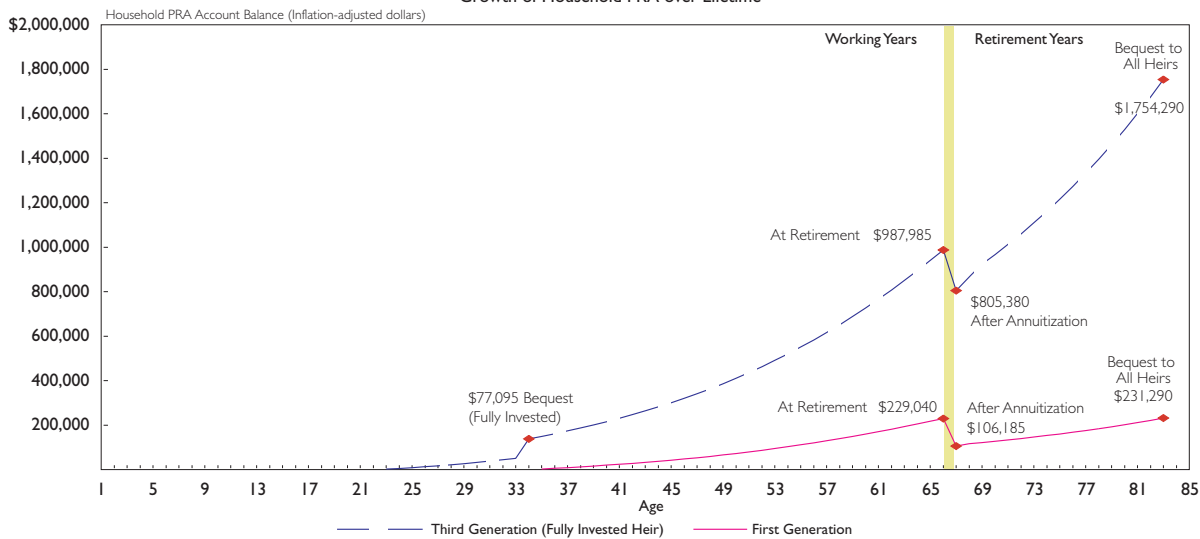
Net Household Wealth (Inflation-adjusted dollars)

Without PRA: $174,045
With PRA: $979,425

Table 11   **Third Generation Enjoys Greater Retirement Options**

Retirement Benefit Plan	First Generation				Third Generation (Fully Invested Heir)				
	Monthly Social Security Benefits				Monthly Social Security Benefits			Additional Retirement Options	
	Part A Government Paid	Part B PRA Annuity	Total	Bequest to Each of Three Heirs	Part A Government Paid	Part B PRA Annuity	Total	Nest Egg at Retirement	Bequest to Future Generation
Current law	$2,250	n/a	$2,250	n/a	$2,865	n/a	$2,865	n/a	n/a
Sample reform plan:									
• Third generation chooses to maximize monthly income	1,365	790	2,155	77,095	980	6,370	7,350	n/a	n/a
• Third generation chooses to maximize nest egg or bequest	1,365	790	2,155	77,095	980	1,175	2,155	805,380	1,754,290

Chart 11B   **Bequest from First Generation Helps Build Third-Generation Wealth**
Growth of Household PRA over Lifetime

Household PRA Account Balance (Inflation-adjusted dollars)

Working Years   Retirement Years

Bequest to All Heirs $1,754,290

At Retirement $987,985

$805,380 After Annuitization

$77,095 Bequest (Fully Invested)

At Retirement $229,040

After Annuitization $106,185

Bequest to All Heirs $231,290

Legend: Third Generation (Fully Invested Heir) — First Generation

Sources: Economic projections are from Social Security Administration (SSA) Intermediate Assumptions from the 2002 OASDI Trustees Report and extended through 2100 by holding average annual growth rates (2038–2080) constant. Income categories are calculated using SSA formulas. Earnings profiles are projected based on age, race, and gender data in the Census 2000 Supplementary Survey (with adjustments for cases with specified occupations). Life expectancies are based on data from the Centers for Disease Control and Prevention. Current law benefits use existing formulas, but are reduced to account for projected trust fund shortfalls. Non-PRA wealth is based on ratios of assets to income as calculated from the Survey of Income and Program Participation.

Note: Sample reform plan is a composite of various proposals and not an official Heritage proposal. Dollar amounts are in 2002 dollars (inflation-adjusted). Details may not sum to total due to rounding to the nearest $5. Total benefits under the sample reform plan equal Social Security benefits under current law (assuming revenue increases) or 200 percent of the poverty threshold for singles (300 percent of the single threshold for married couples), whichever is less. The government-financed portion of Social Security (Part A) pays between 89 percent and 29 percent of total benefits for certain low-income workers (between 93 percent and 53 percent for single-earning couples) depending on birth year. The annuity-financed portion (Part B) funds the remaining amount. The personal retirement account (PRA) is first used to purchase an annuity with monthly benefits that, when added to the government-financed benefits, equals total benefits. However, the remaining balance in the PRA can be used to purchase a larger annuity. Annuity prices are calculated by following the methods used by the federal government's Thrift Savings Plan (TSP) as of June 2003. PRA contributions are based on a percentage of covered wages, beginning with 7 percent for the first $1 of covered wages and ending at 2.5 percent for the maximum subject to Social Security taxes. The PRA is invested in indexed funds with an assumed 4.7 percent inflation-adjusted rate of return, net of administrative fees. See the accompanying report and appendixes for additional information.

Case Study 12
Dual-Earner Average-Income Manufacturing Workers Born in 1963 and 2018

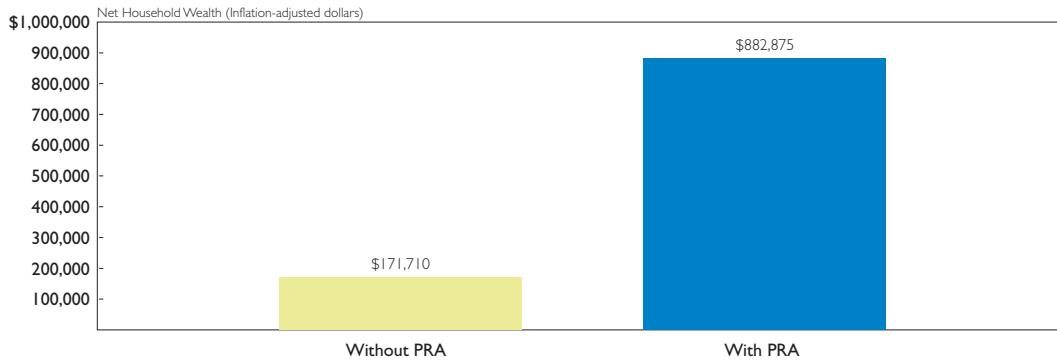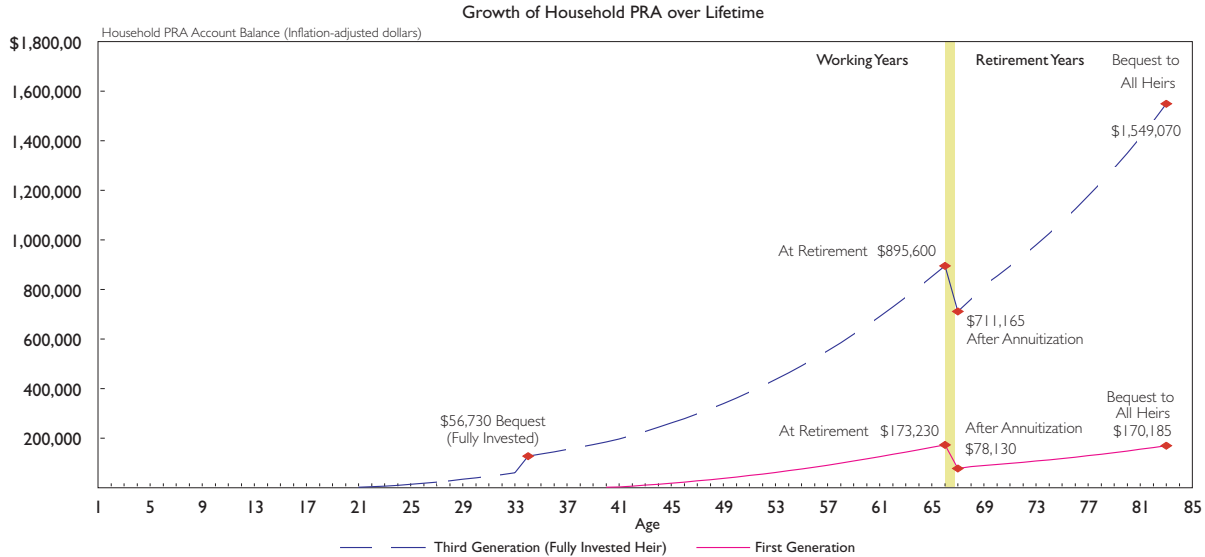**Chart 12A** — **Greater Retirement Net Wealth for Third-Generation Household That Fully Invests Bequest**

Net Household Wealth (Inflation-adjusted dollars)

Without PRA: $171,710
With PRA: $882,875

Table 12 — **Third Generation Enjoys Greater Retirement Options**

	First Generation				Third Generation (Fully Invested Heir)				
	Monthly Social Security Benefits				Monthly Social Security Benefits			Additional Retirement Options	
Retirement Benefit Plan	Part A Government Paid	Part B PRA Annuity	Total	Bequest to Each of Three Heirs	Part A Government Paid	Part B PRA Annuity	Total	Nest Egg at Retirement	Bequest to Future Generation
Current law	$2,500	n/a	$2,500	n/a	$2,980	n/a	$2,980	n/a	n/a
Sample reform plan:									
• Third generation chooses to maximize monthly income	1,545	615	2,155	56,730	970	5,775	6,745	n/a	n/a
• Third generation chooses to maximize nest egg or bequest	1,545	615	2,155	56,730	970	1,190	2,155	711,165	1,549,070

Chart 12B — **Bequest from First Generation Helps Build Third-Generation Wealth**
Growth of Household PRA over Lifetime

Household PRA Account Balance (Inflation-adjusted dollars)

Working Years | Retirement Years | Bequest to All Heirs
At Retirement $895,600
$711,165 After Annuitization
$1,549,070
$56,730 Bequest (Fully Invested)
At Retirement $173,230
After Annuitization $78,130
Bequest to All Heirs $170,185

— Third Generation (Fully Invested Heir)   — First Generation

Sources: Economic projections are from Social Security Administration (SSA) Intermediate Assumptions from the 2002 OASDI Trustees Report and extended through 2100 by holding average annual growth rates (2038–2080) constant. Income categories are calculated using SSA formulas. Earnings profiles are projected based on age, race, and gender data in the Census 2000 Supplementary Survey (with adjustments for cases with specified occupations). Life expectancies are based on data from the Centers for Disease Control and Prevention. Current law benefits use existing formulas, but are reduced to account for projected trust fund shortfalls. Non-PRA wealth is based on ratios of assets to income as calculated from the Survey of Income and Program Participation.

Note: Sample reform plan is a composite of various proposals and not an official Heritage proposal. Dollar amounts are in 2002 dollars (inflation-adjusted). Details may not sum to total due to rounding to the nearest $5. Total benefits under the sample reform plan equal Social Security benefits under current law (assuming revenue increases) or 200 percent of the poverty threshold for singles (300 percent of the single threshold for married couples), whichever is less. The government-financed portion of Social Security (Part A) pays between 89 percent and 29 percent of total benefits for certain low-income workers (between 93 percent and 53 percent for single-earning couples) depending on birth year. The annuity-financed portion (Part B) funds the remaining amount. The personal retirement account (PRA) is first used to purchase an annuity with monthly benefits that, when added to the government-financed benefits, equals total benefits. However, the remaining balance in the PRA can be used to purchase a larger annuity. Annuity prices are calculated by following the methods used by the federal government's Thrift Savings Plan (TSP) as of June 2003. PRA contributions are based on a percentage of covered wages, beginning with 7 percent for the first $1 of covered wages and ending at 2.5 percent for the maximum subject to Social Security taxes. The PRA is invested in indexed funds with an assumed 4.7 percent inflation-adjusted rate of return, net of administrative fees. See the accompanying report and appendixes for additional information.

Table 13   CDA 04–06

Third-Generation Bequest and Retirement Options Under Sample Reform Plan

Case Study	Household	Bequest from First Generation to Third Generation			Monthly Social Security Benefits			Additional Retirement Options		
		Total to All Three Heirs/Per Heir	Portion Invested in PRA by Heir	Amount Invested in PRA by Heir	Part A Government Paid	Part B PRA Annuity	Total	Extra Monthly Benefit	Nest Egg at Retirement	Bequest to Future Generation
1	Low-Income Male Single Earner (African-American)	34,985 / 11,660	fully	$11,660	$415	$1,025	$1,440	$1,400	$202,015	$349,980
			half	5,830	415	1,025	1,440	710	102,285	177,205
			none	0	415	1,025	1,440	20	2,560	4,435
2	Low-Income Female Single Earner (African-American)	25,120 / 8,375	fully	8,375	385	710	1,095	330	47,430	94,270
			half	4,185	385	710	1,095	185	26,635	52,940
			none	0	385	710	1,095	40	5,840	11,605
3	Low-Income Dual-Earner (African-American)	36,995 / 12,330	fully	12,330	770	1,390	2,155	590	91,400	181,670
			half	6,165	770	1,390	2,155	390	60,775	120,795
			none	0	770	1,390	2,155	195	30,150	59,920
4	Average/Low-Income Dual Earner Couple (Hispanic)	119,550 / 39,850	fully	39,850	1,285	810	2,095	2,920	453,040	986,815
			half	19,925	1,285	810	2,095	2,340	362,735	790,110
			none	0	1,285	810	2,095	1,755	272,425	593,405
5	Average Income Single-Earner Couple (Hispanic)	72,365 / 24,120	fully	24,120	1,330	820	2,150	1,995	309,640	674,460
			half	12,060	1,330	820	2,150	1,645	254,975	555,390
			none	0	1,330	820	2,150	1,290	200,310	436,320
6	Average Income Female Single Earner (White)	12,980 / 4,325	fully	4,325	415	1,020	1,440	975	140,655	306,380
			half	2,165	415	1,020	1,440	910	130,850	285,015
			none	0	415	1,020	1,440	840	121,040	263,655
7	Average Income Dual-Earner Couple (African-American)	135,355 / 45,120	fully	45,120	935	1,225	2,155	4,140	641,845	1,275,720
			half	22,560	935	1,225	2,155	3,415	529,795	1,053,010
			none	0	935	1,225	2,155	2,695	417,745	830,300
8	Average Income Single-Earner Couple (White)	110,035 / 36,680	fully	36,680	1,470	685	2,155	3,025	468,855	1,021,270
			half	18,340	1,470	685	2,155	2,485	385,735	840,220
			none	0	1,470	685	2,155	1,950	302,615	659,165
9	Average Income Dual-Earner Couple (White)	115,005 / 38,335	fully	38,335	940	1,215	2,155	4,190	650,190	1,416,265
			half	19,165	940	1,215	2,155	3,630	563,320	1,227,035
			none	0	940	1,215	2,155	3,070	476,450	1,037,810
10	Average Income Female Divorced (White)	17,215 / 5,740	fully	5,740	410	1,025	1,440	530	76,040	165,630
			half	2,870	410	1,025	1,440	435	63,035	137,310
			none	0	410	1,025	1,440	345	50,035	108,985
11	Average Income Dual-Earner Couple	231,290 / 77,095	fully	77,095	980	1,175	2,155	5,195	805,380	1,754,290
			half	38,550	980	1,175	2,155	4,065	630,665	1,373,730
			none	0	980	1,175	2,155	2,940	455,950	993,165
12	Average Income Dual-Earner Couple	170,185 / 56,730	fully	56,730	970	1,190	2,155	4,585	711,165	1,549,070
			half	28,365	970	1,190	2,155	3,755	582,610	1,269,050
			none	0	970	1,190	2,155	2,930	454,055	989,030

Note: All amounts are in 2002 dollars (inflation-adjusted). Earnings profiles are projected based on age, race, and gender data in the Census 2000 Supplementary Survey (with adjustments for cases with specified occupations). See Appendix 5 for additional information on source and plan description.

APPENDIX 2
SHORTCOMINGS OF THE SOCIAL SECURITY RETIREMENT SYSTEM

Before the advent of Social Security, Americans had a long history of private provision of retirement income. However, the actions of government regulators combined with apprehensions brought on by the Great Depression produced a change in the political climate that caused a loss of faith in this heritage and a turn instead toward a government role in providing retirement security. (See Appendix 3, "Saving Behavior Prior to Social Security.")

Despite the initial positive returns provided to the first generations covered by Social Security, the system is proving to be increasingly inadequate for current and future workers. Under the current system, most workers effectively lose control of 10.6 percent[52] of their wages due to Social Security taxes—a portion of which might otherwise have been set aside and saved.[53]

The amount of money involved is large, both for the national economy and for individual workers. In 2003, the retirement portion of Social Security took in $456.1 billion in taxes—about 4.2 percent of the U.S. gross domestic product.[54] Meanwhile, the Congressional Budget Office reports that approximately 80 percent of Americans, predominantly low-income and moderate-income earners, currently pay more in payroll taxes than federal income taxes.[55] Overall, the Social Security tax, along with other features of the system, produces significant distortions in the U.S. economy.[56]

Despite the large transfer of tax money into the system, Social Security provides a low rate of return to current and future workers. Previous research has demonstrated the low rates of return that Americans of various ethnic and economic backgrounds are likely to earn under the current system.[57] Similar analysis by the Social Security Administration (SSA) shows that real rates of return are below those typical of privately held investment portfolios consisting of equities and government bonds.[58] For instance, one SSA analysis found that, even including the probability of receiving disability benefits, a single male born in 2004 and earning annual wages equal to each year's national average wage (as defined by SSA) could expect a real rate of return of only 2.04 percent. Likewise, a single female born in 2004 and earning the same average wage throughout her

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52. Under current law, each wage earner pays 5.3 percent of his or her earnings (up to the Social Security wage cap of $87,900 in 2004) to the OASI portion of Social Security. In addition, each earner's employer pays a matching amount in the employee's name. Most economists do not view the distinction between the employee's share and the employer's share as a real economic one. Specifically, they believe that the employer's share of the wage tax results in a dollar-for-dollar reduction of the worker's wages. For example, both the U.S. Department of the Treasury and the Congressional Budget Office assume in their respective models of tax incidence that labor fully bears both portions of the OASDI tax. See Julie-Anne Cronin, "U.S. Treasury Distribution Analysis Methodology," U.S. Department of the Treasury, Office of Tax Analysis, *OTA Paper 85*, September 1999, p. 20, at *www.treas.gov/ota/ota85.pdf* (June 2, 2004). See also Congressional Budget Office, "Effective Federal Tax Rates, 1979–1997," October 2001, at *ftp.cbo.gov/30xx/doc3089/EffectiveTaxRate.pdf* (June 2, 2004), p. 60.

53. For example, research published by the Federal Reserve Bank of St. Louis, analyzing the reform proposals offered by the 1994–1996 Advisory Council on Social Security using a hypothetical Federal Reserve model, argues that "all else equal, pay-as-you-go social security taxes create strong disincentives to saving…because an increase in the social security tax rate [*sic*] imposes a negative income effect on workers and a positive income effect on retirees via higher social security benefits. Both effects reduce saving, which reduces capital accumulation and hence the growth rate of per capita income." Rowena A. Pecchenino and Patricia S. Pollard, "Reforming Social Security: A Welfare Analysis," *Federal Reserve Bank of St. Louis Review*, Vol. 80, No. 2 (March/April 1998), p. 25, at *research.stlouisfed.org/publications/review/98/03/9803pp.pdf* (June 2, 2004).

54. This total counts OASI alone and excludes Disability Insurance and Medicare taxes. Social Security Administration, *The 2004 Annual Report of the Board of Trustees of the Federal Old-Age and Survivors Insurance and Disability Insurance Trust Fund*, March 23, 2004, p. 4, at *www.socialsecurity.gov/OACT/TR/TR04/tr04.pdf* (June 2, 2004).

55. "Economic theory and empirical evidence suggest that workers bear much of the employer's portion of the payroll tax through lower wages and reduced fringe benefits. If the employer-paid portion of payroll tax receipts is counted as the contribution of the worker, roughly 80 percent of taxpayers pay more in payroll taxes than in income taxes." The 80 percent figure includes payroll taxes for Social Security's other two principal programs: Disability Insurance and Hospital Insurance. Congressional Budget Office, "Economic Stimulus: Evaluating Proposed Changes in Tax Policy," January 2002, p. 12, footnote 7, at *ftp.cbo.gov/32xx/doc3251/FiscalStimulus.pdf* (June 2, 2004).

earning years could expect to receive a real rate of return of only 2.37 percent.[59]

The reason for these low rates of return is straightforward. As pointed out in the 1994–1996 Report of the Advisory Council on Social Security:

> Massive intergenerational transfers have been delivered to current and past retirees who contributed to the system in its early years before there were many retirees, financed by the current generation of workers to whom smaller retirement benefits will accrue under current law. This pattern, often seen during the start up of

certain types of social insurance systems, is no longer viable.[60]

As a result, the program will transfer an estimated $9.7 trillion from workers born in 1938 or later to those born in 1937 or earlier.[61] With such backward intergenerational transfers continuing unabated, few claim today that most young workers can get a fair return on their Social Security taxes.[62]

Furthermore, the current retirement system comes with enormous political risks. The values of Social Security retirement benefits are specified by law, but Congress has the authority to change them at any time: for example, by reducing or delaying them.[63] Given the long-term financial

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56. "For younger workers, Social Security payroll taxes reduce the marginal take-home pay of those earnings less than the maximum covered earnings. People tend to perceive that they are paying more in social security contributions than they will receive in the form of Social Security benefits…which will reduce the value of working and affect labor supply decisions as do other taxes on earnings. These interactions cause some to save at rates different from those they would if not confronted by the distortions inherent in these programs.… Overall, a Social Security reform which reduced labor market and savings distortions would be viewed positively according to this criterion [the avoidance of market inefficiencies]." See "Report of the Technical Panel on Trends and Issues in Retirement Saving," in *Report of the 1994–1996 Advisory Council on Social Security*, Vol. II, p. 64, at *www.socialsecurity.gov/history/reports/adcouncil/index.html#tech* (June 2, 2004). Hereafter cited as "Report of the Technical Panel."

57. See Gareth G. Davis and Philippe J. Lacoude, *What Social Security Will Pay: Rates of Return by Congressional District* (Washington, D.C.: The Heritage Foundation, 2000). Criticisms of the path-breaking methodology used in this report to calculate the Social Security rate of return are addressed specifically in pp. 143–158. See also William W. Beach and Gareth G. Davis, "Social Security's Rates of Return," Heritage Foundation *Center for Data Analysis Report* No. CDA98–01, January 15, 1998; William W. Beach and Gareth G. Davis, "Social Security's Rate of Return for Hispanic Americans," Heritage Foundation *Center for Data Analysis Report* No. CDA98–02, March 27, 1998; William W. Beach, Gareth G. Davis, and Sarah E. Youssef, "A State-by-State Analysis of Return on Social Security," Heritage Foundation *Center for Data Analysis Report* No. CDA98–05, July 30, 1998; and William W. Beach and Gareth G. Davis, "Social Security's Rate of Return for Union Households," Heritage Foundation *Center for Data Analysis Report* No. CDA98–06, September 7, 1998.

58. Goss, "Appendix II," pp. 179 and 219–222. Although these rate-of-return calculations figure in the Disability Insurance portion of OASDI and are thus higher than OASI rates of return alone, they are still lower than those for even conservative investment portfolios.

59. Orlo R. Nichols, Michael D. Clingman, and Milton P. Glanz, "Internal Real Rates of Return Under the OASDI Program for Hypothetical Workers," Social Security Administration, Office of the Chief Actuary, *Actuarial Note 144*, June 2001, Table 3, at *www.socialsecurity.gov/OACT/NOTES/note144.html* (June 2, 2004). When calculating the return to OASDI using the future tax rates necessary to maintain expected current-law benefit levels, every worker covered by the system and born after 1984 has an expected return of less than 5 percent (inflation-adjusted) and (excluding those with spousal benefits) nearly all returns are less than 3 percent. For a critique of the inclusion of Disability Insurance in calculating rates of return and other issues surrounding the use of the rate-of-return method, see William W. Beach and Gareth G. Davis, "Social Security's Rate of Return: A Reply to Our Critics," Heritage Foundation *Center for Data Analysis Report* No. CDA98–08, December 14, 1998, pp. 8–9. Changes in the Social Security system illustrated in this report apply only to the OASI portion and do not affect the Disability Insurance portion of the program. Furthermore, referring to the issue of disability and survivors' benefits, one of the members of the 1994–1996 Advisory Council said, "Although this argument [that the inclusion of Disability Insurance raises rates of return] is widely proffered by supporters of the program, it has not been empirically validated. As a member of the 1994–1996 Advisory Council on Social Security, one of the current authors (Schieber) specifically asked, along with other members of the council, that Social Security staff undertake an analysis of this very point. The SSA simply would not develop such an analysis.… Only government employees are given access to that data [necessary for such an analysis]." Sylvester J. Schieber and John B. Shoven, *The Real Deal: The History and Future of Social Security* (New Haven, Conn.: Yale University Press, 1999), p. 227.

60. "Report of the Technical Panel," p. 64.

difficulties that the program faces, this particular shortcoming presents a serious risk for those individuals who will depend largely on Social Security benefits during retirement. In 2000, for instance, approximately one-third of Social Security beneficiaries relied on Social Security for at least 90 percent of their retirement income, while almost two-thirds of all recipients received at least 50 percent of their income from Social Security.[64]

If the law is not changed, revenues from the Social Security payroll tax are projected to fall below expected total payments for current-law benefits in 2018.[65] Benefits can be paid for a while by selling special Treasury bonds issued to the OASI Trust Fund.[66] However, buying back these special bonds will require that the federal government reduce spending on other government programs, increase taxes, or increase government borrowing.[67] Even so, unless additional action is taken, the OASI Trust Fund will be "exhausted" in 2044, and OASI income from *all* sources will be insufficient to cover promised benefits.[68]

In addition to Social Security's low rate of return and its enormous financial and political risks, workers lack property rights to the benefits, as clearly stated in the Social Security Act: "The right to alter, amend, or repeal any provision of this Act is hereby reserved to the Congress."[69]

Furthermore, in the two most important Supreme Court cases dealing with Social Security, the federal government has argued that there are no property rights to Social Security benefits. In *Helvering v. Davis* (1937), the government argued that Social Security benefits possess "no contract created by which any person becomes entitled as a matter of right to sue the United States or to maintain a claim for any particular sum of money."[70] In *Flemming v. Nestor* (1960), the government's brief

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61. These estimates are in 1997 dollars. See John Geanakoplos, Olivia S. Mitchell, and Stephen P. Zeldes, "Social Security Money's Worth," in Olivia S. Mitchell, Robert J. Myers, and Howard Young, eds., *Prospects for Social Security Reform* (Philadelphia: University of Pennsylvania Press, 1999). An earlier version of this paper can be found at *cowles.econ.yale. edu/p/cd/d11b/d1193.pdf* (June 2, 2004).

62. Current workers can only hope to recoup this transfer by taking an equal amount of money from the income of future workers, many of whom have yet to be born. Even so, changing demographics make this a virtual impossibility under the current system: As early as 2037, each retiree will be receiving Social Security at the expense of the payroll tax of two workers. This figure is for the combined OASDI system. For OASI alone, there will be only 2.5 workers paying taxes for each retiree starting in 2032. See *2002 OASDI Trustees Report*, Table IV.B2.

63. An example is the 1983 Amendments to the Social Security Act that effectively reduced benefits for American workers born in 1938 or later by gradually pushing back the full-benefits retirement age from 65 to 67. See Social Security Administration, "Summary of P.L. 98–21, (H.R. 1900) Social Security Amendments of 1983, Signed on April 20, 1983," at *www.socialsecurity.gov/history/1983amend.html* (June 2, 2004).

64. Social Security Administration, *Annual Statistical Supplement, 2001, to the Social Security Bulletin*, December 2001, p. 18, at *www.ssa.gov/policy/docs/statcomps/supplement/2001/index.html* (July 7, 2004). These figures represent benefits received from both the OASI retirement portion and the Disability Insurance portion of Social Security.

65. This date of exhaustion applies to the OASI portion only and is based on the *2002 OASDI Trustees Report*, although the projections in the 2003 and 2004 reports are not materially different. *2002 OASDI Trustees Report*, Table IV.B1. For the combined OASDI system, the year when payroll taxes will not by themselves cover benefits is 2017, as shown in that same table.

66. The bonds issued by the U.S. Treasury to the OASDI Trust Fund are special public-debt obligations that operate in a manner slightly different from that of normal public-debt obligation bonds. See Social Security Administration, *2003 OASDI Trustees Report*, Glossary, p. 204, s.v. "Special Public-Debt Obligation," and Social Security Act, P.L. 74–271 (49 Stat. 620), August 14, 1935, Title II, Section 201(d).

67. "These balances [federal trust funds] are available to finance future benefit payments and other trust fund expenditures—but only in a bookkeeping sense. These funds are not set up to be pension funds, like the funds of private pension plans. They do not consist of real economic assets that can be drawn down in the future to fund benefits. Instead, they are claims on the Treasury that, when redeemed, will have to be financed by raising taxes, borrowing from the public, or reducing benefits or other expenditures. *The existence of large trust fund balances, therefore, does not, by itself, have any impact on the Government's ability to pay benefits.*" Office of Management and Budget, *Budget of the United States Government, Fiscal Year 2000: Analytical Perspectives*, 1999, p. 337 (emphasis added).

68. *2002 OASDI Trustees Report*, Table IV.B3.

69. 42 U.S. Code, Sec. 1304.

bluntly stated that "this view that such benefits [from Social Security] are 'fully accrued property rights' is wholly erroneous,"[71] a position completely affirmed by the Court.[72]

Consequently, without individual property rights to Social Security benefits, there can be no provisions allowing workers to transfer the balance of their accumulated Social Security taxes to heirs in the event of an early death.[73] The "demographic risk" of the current system highlights the shortcoming of this lack of property rights. Data from the National Center for Health Statistics—cited by the SSA in a 1998 memo criticizing rate-of-return analysis—show that approximately one-third of African–American males and 20 percent of white males who reach the age of 50 will die by the age of 70.[74] Furthermore, the introduction to the report of the 2001 President's Commission to Strengthen Social Security stated that only 65 percent of 20-year-old African–American men could expect to reach age 65.[75] These persons will receive few or no Social Security benefits, and the amounts paid in Social Security taxes cannot be transferred to their heirs.

On the other hand, personal retirement accounts directly mitigate the financial effects of death prior to retirement. Since workers begin paying Social Security payroll taxes when they begin working,[76] PRAs financed out of a portion of Social Security payroll taxes would offer workers the chance to begin investing at an early age. Research indicates that the proportion of earnings saved and the timing of saving exert a bigger influence in determining accumulated retirement savings than earnings levels or "luck" in the stock market.[77] By ensuring that every worker starts to save with his or her first paycheck, PRAs ensure a lengthy investing horizon that can take full advantage of long-term investment performance. In addition, if a worker suffers an untimely death, previous saving efforts will not be lost, as happens under the current Social Security system.[78]

The problems raised by the lack of property rights and by demographic risks are further com-

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70. The government's oral argument went on to state that, "Not only is there no contract implied but it is expressly negatived, because it is provided in the act, section 1104, that it may be repealed, altered, or amended in any of its provisions at any time. This Court has held that a pension granted by the Government is a matter of bounty, that the pensioner has no legal right to his pension, and that they may be given, withheld, distributed, or recalled at the discretion of Congress." U.S. Senate, *Oral Arguments in* Helvering et al. v. Davis *Involving the Old Age Benefit Provisions of the Social Security Act Before the Supreme Court of the United States, May 5, 1937*, S. Doc. 71, 75th Cong., 1st Sess., 1937, p. 16, quoted in John Attarian, *Social Security: False Consciousness and Crisis* (New Brunswick, N.J.: Transaction Publishers, 2002), p. 106.

71. U.S. Supreme Court, *Records and Briefs*, October term, 1959, No. 54, *Flemming v. Nestor*, Brief for the Appellant, p. 53, quoted in Attarian, *Social Security: False Consciousness and Crisis*, p. 212.

72. The Court found, among other things, that "to engraft upon the Social Security system a concept of 'accrued property rights' would deprive it of the flexibility and boldness in adjustment to ever-changing conditions which it demands." *Flemming v. Nestor*, 363 U.S. 603, 1960, pp. 603–604, at *www.socialsecurity.gov/history/nestor.html* (June 2, 2004).

73. Social Security does provide a one-time lump-sum death benefit of up to $255, subject to requirements. See 42 U.S. Code, Sec. 402(i).

74. Stephen C. Goss, "Problems with 'Social Security's Rate of Return: A Report of The Heritage Foundation Center for Data Analysis,'" Social Security Administration *Memorandum*, February 4, 1998, and Beach and Davis, "Social Security's Rate of Return: A Reply to Our Critics," pp. 9–11. See also Robert N. Anderson and Peter B. DeTurk, "United States Life Tables, 1999," in National Center for Health Statistics, *National Vital Statistics Reports*, Vol. 50, No. 6 (March 21, 2002), p. 3, Table B, at *www.cdc.gov/nchs/data/nvsr/nvsr50/nvsr50_06.pdf* (June 2, 2004).

75. President's Commission to Strengthen Social Security, *Strengthening Social Security and Creating Personal Wealth for All Americans*, p. 7.

76. There is no minimum age requirement for Social Security taxation of covered earnings, although various minimum earnings-level tests do exist, based on certain defined occupations. See 42 U.S. Code, Sections 409–412, and Avram Sacks, "Coverage (¶301)," in *2002 Social Security Explained* (Chicago, Ill.: CCH Incorporated, 2002), pp. 109–156.

77. Steven F. Venti and David A. Wise have shown that the level of individuals' retirement income, as a percentage of their working-life earnings, is best predicted by how early and how much of their earnings they save and is little affected by health shocks or economic and market uncertainty. Steven F. Venti and David A. Wise, "Choice, Chance, and Wealth Dispersion at Retirement," National Bureau of Economic Research *Working Paper* No. w7521, February 2000, at *www.nber.org/papers/w7521* (June 2, 2004).

pounded across generations by the type of benefit that Social Security provides to retirees. Upon retirement, Social Security benefits are paid out monthly and adjusted annually for inflation. Social Security thus provides the equivalent of an "immediate life annuity" that lasts only until the retiree—or a spouse, if the spouse is receiving spousal benefits—dies.[79] In essence, Social Security retirement benefits are forcibly locked into a single source on the worker's behalf—a kind of forced annuitization.[80]

The impact that this locking up of retirement wealth has on retirees depends on how much of their total retirement wealth consists of Social Security benefits. Survey results from the Health and Retirement Study show that the bottom 10 percent of those with net financial retirement wealth receive over 90 percent of their retirement wealth from Social Security benefits, while those in the bottom third receive over 60 percent from this one source.[81]

As a result, lower-income earners—who have the majority of their forced lifetime savings locked up for use in this single type of benefit—have their retirement spending choices largely restricted.

Jagadeesh Gokhale of the American Enterprise Institute studied the effects of this locking up of retirement savings on lower-income earners. In particular, he found that Social Security may severely curtail the ability of poorer retirees to leave inheritances:

> This forced annuitization of a large fraction of low earners' lifetime resources leaves them with little bequeathable wealth during retirement. Hence, low earners leave few, if any, bequests upon death…. Because of its asymmetrical impact on saving by low and high earners, Social Security reduces or eliminates inheritances of children in poor households but not those in rich ones.[82]

Social Security reform that includes PRAs could overcome this excessive locking up of retirement resources and widen the availability of inheritances for lower-income households. However, the constraints imposed by the financial and demographic shortcomings of the current Social Security system require a fresh approach to reform, including more than just the addition of PRAs. (See Appendix 4, "Alternatives to Forced Annuitization.")

78. As an alternative to the inheritance provisions of PRAs, some have advocated increasing the lump-sum death benefit currently available under Social Security (up to $255) or adding an explicit insurance component to the current system. However, adding options to Social Security that provide benefits comparable to PRAs comes with additional costs, whereas PRAs can provide similar benefits within the constraints of the existing 10.6 percent payroll tax.

79. "An annuity is a financial instrument that converts a lump sum of money into a stream of income payable for life…. When purchasing an *immediate life annuity*, an individual pays a lump sum of money to a financial institution and receives in exchange a promise of a certain amount of monthly income for life (or for the life of the individual and his or her spouse)." See American Academy of Actuaries, "Annuitization of Social Security Individual Accounts," *Issue Brief*, November 2001, p. 1, at *www.actuary.org/pdf/socialsecurity/annuity_nov01.pdf* (June 2, 2004) (emphasis added).

80. This definition of forced annuitization should not be confused with the technical definition used in defining a specific type of annuity provision: "When an annuity contract requires liquidation once the annuitant reaches a certain age (typically 80 or 85)." See "Forced Annuitization," *Annuity Terms*, AnnuiWeb, 2002, at *www.annuiweb.com/tree/client/glossary_view.asp* (June 2, 2004).

81. James F. Moore and Olivia S. Mitchell, "Projected Retirement Wealth and Savings Adequacy in the Health and Retirement Study," in Olivia S. Mitchell, P. Brett Hammond, and Anna M. Rappaport, eds., *Forecasting Retirement Needs and Retirement Wealth* (Philadelphia: University of Pennsylvania Press, 2000), pp. 68–94.

82. Gokhale, "Does Social Security Worsen Inequality?" August 15, 2001, p. 2.

APPENDIX 3
SAVING BEHAVIOR PRIOR TO SOCIAL SECURITY[83]

The experience of the early 20th century shows that consumers, when given a choice in the marketplace, repeatedly favor plans that combine a retirement income with benefits that can be passed down to children. During the 19th century, Americans relied heavily on fraternal societies to provide financial benefits for their spouses in old age and for their children. By 1920, about 9 million individuals (representing one-third or more of the adult male population) belonged to one of the more than 100,000 lodges in the United States. A key motivation for joining was to secure future protection for family members, principally spouses. For this reason, the most popular fraternal plan was the death benefit paid primarily to widows, averaging more than $1,000 (equivalent, in most cases, to one year's income) and totaling over $9 billion by 1920.[84]

Simultaneously, around the turn of the century, commercial insurance companies scrambled to meet a growing consumer demand for products that would provide families with retirement income as well as financial security. The most popular of these was semi-tontine insurance. First introduced in the 1870s, it was sold directly to Americans by commercial life insurance companies. By 1905, 9 million Americans (out of the 18 million households in the United States) owned such a policy, whose combined value constituted an impressive 7.5 percent of all national wealth.[85]

Semi-tontine insurance was popular because it filled a real need for breadwinners and their families by simultaneously guaranteeing retirement income and a fixed benefit to children and spouses. Two types of premiums were paid: one for life insurance and another to fund a retirement income pool that matured at a fixed term—usually 20 years—and was split among the participants remaining after the 20 years.[86] As a means of savings and investment, semi-tontine insurance served a function similar to that of the modern individual retirement account (IRA) while also guaranteeing life insurance for the families of policyholders, whether or not they had qualified to participate in the division of the pool.[87]

Legislation in the first decade of the 20th century put an end to this promising innovation. The New York State Legislature's 1905 Armstrong Investigation spearheaded this assault by charging semi-tontine insurance providers with fraud and abuse,[88] despite a lack of evidence and in the face of real rates of return of 7.8 percent compared to only 6.1 percent in normal savings accounts.[89]

The destruction of semi-tontine insurance was followed by a rapid expansion of private pension plans. During the 1920s, the assets of pension funds skyrocketed from $50 million to $500 million. By 1929, there were 440 private pension plans in operation, up from about a dozen in 1900. In 1928, some 5 million workers—approximately 14 percent of the workforce—were covered by industrial pensions: 4 million by companies and 1 million by unions. Furthermore, the initial plans were usually noncontributory, meaning that employees made no direct contributions.[90]

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83. This section was written by David Beito, Associate Professor of History at the University of Alabama.

84. Walter Basye, *History and Operation of Fraternal Insurance* (Rochester, N.Y.: The Fraternal Monitor, 1919), pp. 15–17, and David T. Beito, *From Mutual Aid to the Welfare State: Fraternal Societies and Social Services, 1890–1967* (Chapel Hill: University of North Carolina Press, 2000), pp. 12–13.

85. Roger L. Ransom and Richard Sutch, "Tontine Insurance and the Armstrong Investigation: A Case of Stifled Innovation, 1868–1905," *Journal of Economic History*, Vol. 47, No. 2 (June 1987), pp. 385–386.

86. *Ibid.*, pp. 380–382.

87. *Ibid.*, p. 385.

88. *Ibid.*, pp. 388–390.

89. *Ibid.*, pp. 381 and 386.

90. Carolyn L. Weaver, "Support for the Elderly Before the Depression: Individual and Collective Arrangements," *Cato Journal*, Vol. 7, No. 2 (Fall 1987), pp. 515–517, and Carolyn L. Weaver, *The Crisis in Social Security: Economic and Political Origins* (Durham, N.C.: Duke University Press Policy Studies, 1982), pp. 47–48 and 62.

Even with the economic collapse of the 1930s, industrial pension plans remained sound and even grew at an increasing rate. By 1932, only 3 percent of workers who had been covered before 1929 were in plans that were suspended, closed to new entrants, or eliminated. By 1935, there were 750 plans compared to 420 in 1930. The new plans eliminated long service requirements, promised higher benefits, placed greater reliance on employee contributions instead of the noncontributory approach, gave workers who switched jobs greater portability, and increased safety through commercial reinsurance.[91] By 1935, most plans allowed workers to withdraw their annuities and use the funds for other purposes, including down payments on homes.[92]

Despite bad economic times and interference by an overzealous government, previous generations left a legacy of prudential retirement planning. The establishment of personal retirement accounts through Social Security could be a bridge from America's past savings heritage to a more secure and choice-laden future.

91. Weaver, *The Crisis in Social Security*, pp. 62–63.

92. *Ibid.*

APPENDIX 4
ALTERNATIVES TO FORCED ANNUITIZATION

"These constraints required that we begin to 'think outside' the normal boundaries of public policy that have constrained the development of Social Security policy for more than 60 years."[93] This policy advice from members of a recent Social Security advisory board reflects the challenges of balancing Social Security's finances while trying to maintain the current Social Security tax and benefit structure. In order to avoid relying on increased payroll taxes, PRA reform plans typically introduce new ways to deliver retirement benefits. In particular, they limit the level of forced annuitization and fiscal burden imposed on future generations by the current method of calculating Social Security benefits.

The current method of calculating *initial* benefits[94] contributes not only to excessive forced annuitization, but also to the fiscal burden that will have to be borne by future generations of workers. Although the current wage-indexing method was designed to correct a previous calculation error that expanded benefits far beyond the fiscal capacity of the Social Security system to handle,[95] it still produces benefits much higher than the historical level prior to the 1970s.[96] As a result, the current wage-indexing method increases the tax burden of future generations and contributes to expected future funding shortfalls.[97]

When the current method was adopted, some analysts expressed reservations about how the wage indexing of benefits might affect future Social Security financing.[98] In 1976, an independent Consultant Panel on Social Security unanimously recommended using a benefit formula based on price indexing, limiting the growth of initial Social Security benefits to the inflation rate.[99] The panel's primary concern was the cost to future taxpayers of funding benefits using a wage-indexing method, which in turn would reduce Congress's control and flexibility over the Social Security program.[100]

In 1979, members of that year's Advisory Coun-

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93. Bok, *et al.*, "Restoring Security to Our Social Security Retirement Program," p. 102. "In sum, the Advisory Council faced a Social Security system projected to be underfunded by 25 to 30 percent after the turn of the century, a strong reluctance to increase payroll taxes to deliver current-law benefits, and real concerns about cutting benefits sufficiently to rebalance the system." *Ibid.*

94. "Initial benefits" refers to the benefits available upon normal retirement age (NRA). For early retirements (age 62 to NRA), the initial benefit is reduced by set amounts, and for later retirements (NRA to 70), the initial benefit is increased by set amounts. Once a retiree begins to receive initial benefits, the initial benefits are increased yearly at the rate of inflation only. Social Security Act, P.L.74–271 (49 Stat. 620), August 14, 1935, Title II, Section 202(q) and (w). For more information on automatic adjustments of benefits, see Social Security Administration, "Amounts That Increase with Average Wages," updated October 16, 2003, at *www.ssa.gov/OACT/COLA/wageindexed.html* (June 2, 2004).

95. In particular, the 1972 changes in the benefit formula provided a "double indexation" of benefits resulting in unsustainable increases in initial benefits. Colin D. Campbell, "Over Indexed Benefits: The Decoupling Proposals for Social Security," American Enterprise Institute *Domestic Affairs Studies* No. 46, May 1976, pp. 7–10.

96. As measured by "replacement rates," which is the size of monthly benefits as a percentage of average monthly earnings during working years. See *2002 OASDI Trustees Report*, pp. 177–180 and Table VI.E11. For a brief overview of historical replacement rates, see Social Security Administration, Kansas City Region, "The Notch: What It Is and What It Isn't," Region VII *Fact Sheet* No. 14, April 2002, at *www.ssa.gov/kc/fact_sheet_14.htm* (June 2, 2004).

97. Stephen J. Entin, "COLAs Not the Cause of Social Security Deficits," Institute for Research on the Economics of Taxation *Congressional Advisory* No. 60, April 28, 1997.

98. The current wage-indexing method of calculating initial benefits became law in December 1977. See John Snee and Mary Ross, "Social Security Amendments of 1977: Legislative History and Summary of Provisions," *Social Security Bulletin*, Vol. 41, No. 3 (March 1978), pp. 3–20.

99. *Report of the Consultant Panel on Social Security to the Congressional Research Service*, Committee on Ways and Means, U.S. House of Representatives, and Committee on Finance, U.S. Senate, 94th Cong., 2nd Sess., August 1976.

100. "[W]e recognize that every increase in benefits must be financed by an increase in taxes—whether from payroll or from general government revenue. We have tried, therefore, to strike a reasonable balance between benefits and the cost of providing them." *Ibid.*, p. 3.

cil on Social Security, including Council Chairman Henry J. Aaron, again recommended a price-indexing formula for initial Social Security benefits.[101] Aside from concerns over the burden that higher, wage-indexed benefits would impose on future generations of workers, this group also questioned the rationale behind the wage indexing of benefits: "[A]s real incomes continue to rise, it is not so easy to justify the requirement that workers and their employers 'save' through payroll tax contributions to finance ever higher replacement incomes, far above those needed to avoid severe hardship."[102]

As a way to minimize forced annuitization, many Social Security reform plans include provisions that would alter how retirement benefits are received. Most of these are based on a "two-tiered" or "double-decker" concept. The first tier consists of a standard minimum benefit designed to stave off poverty during retirement. The second tier, left unannuitized, is then used to provide more flexibility for retirement spending choices.

Examples of such two-tiered plans include the proposal put forward by members of the 1994–1996 Advisory Council on Social Security, who recommended a minimum benefit limiting the level of forced annuitization.[103] As long as the first tier provided an adequate minimum, they concluded that such a benefit "provided a significant degree of forced annuitization, and that any further requirement was unnecessary."[104] Their rationale was that "retirees who want to live a more thrifty lifestyle than the general public deem appropriate…should be able to do so without the interference of the government."[105] More recently, Reform Model 2 of the 2001 President's Commission to Strengthen Social Security recommended a combination of a high minimum benefit and a return to the price indexing of normal benefits, combined with the option to leave some of the extra benefits from a personal retirement account unannuitized.[106]

The sample plan used in this report includes a benefit formula that uses 200 percent of the individual poverty threshold as part of a multi-tiered benefit plan (300 percent of the individual poverty level for married couples). The 200-percent-of-poverty threshold criterion combined with a PRA has an effect similar to a plan with a price-indexed benefit because both reduce annuity requirements. However, the PRA provides a new option in return for less forced annuitization. In short, the difference between multi-tiered reform plans and the current Social Security system is a difference not just in the amount of benefits, but also in the *form* of benefits.

101. Henry J. Aaron, Gardner Ackley, Mary C. Falvey, John W. Porter, and J. W. Van Gorkom, "Supplementary Statement on the Future Course of the Replacement Rate," *Social Security Financing and Benefits: Report of the 1979 Advisory Council*, U.S. Department of Health, Education, and Welfare, December 1979, pp. 212–215.

102. *Ibid.*, p. 214.

103. Bok *et al.*, "Restoring Security to Our Social Security Retirement Program."

104. *Ibid.*, p. 117.

105. *Ibid.*

106. President's Commission to Strengthen Social Security, *Strengthening Social Security and Creating Personal Wealth for All Americans*, pp. 56 and 119–130.

APPENDIX 5
METHODOLOGY

General

Unless otherwise noted, all dollar amounts shown in the case studies are in 2002 inflation-adjusted ("real") dollars and are rounded to the nearest $5. Unless otherwise noted, the economic assumptions used in the report are based on the "intermediate" assumptions in SSA's 2002 OASDI Trustees Report.[107]

Case Study Demographics

Center for Data Analysis (CDA) analysts used life expectancy estimates by sex and ethnicity from the Centers for Disease Control and Prevention.[108] Life expectancies are for individuals at age 65 and are rounded to the nearest whole year to simplify the calculations. Each married person is assumed to have the same birth year as his or her spouse. Life expectancies for Hispanics are based on those of whites.[109] Divorced workers are assumed not to have any claims to Social Security benefits based on their prior married status.

The demographic characteristics assumed for first-generation workers are also assumed for their third-generation heirs. In general, third-generation life events are assumed to occur exactly 50 years after the equivalent first-generation life events. One exception to this is Case Study 1, in which the first-generation granduncle dies before retirement at age 55 while his third-generation heirs live to their life expectancies. The other exception is Case Study 9, in which the higher-earning spouse of the dual-earning couple dies at age 55 while his or her third-generation heirs (and their spouses) live to their life expectancies.

Earnings Projections

CDA researchers projected each worker's annual labor earnings as a function of the inflation-adjusted intermediate assumptions for the national average annual wage (the SSA Average Wage Index) published in the 2002 Social Security Trustees report.[110] Because the 2002 Trustees Report projects earnings only to 2080, CDA extended these projections to 2100 using the 2002 Trustees Report's intermediate assumptions of annual real-wage growth of 1.1 percent.[111] Projections were adjusted for each worker according to whether he or she was an average or low-income earner.[112] Earnings profiles by age, sex, and ethnicity were constructed using data from the Census 2000 Supplementary Survey.[113] Earnings profiles were constructed for six categories of workers: white male, white female, African–American male, African–American female, Hispanic male, and Hispanic female.[114] Most workers were assumed to begin earning covered wages at age 16, while others were assumed to begin working at 21 or 23.[115] Earnings projections for workers with assumed occupations were adjusted for age and occupation,[116] but not for sex or ethnicity. (See Case Studies 11 and 12.) The earnings for first-generation workers are illustrated in Figure 4 and Figure 5.

107. *2002 OASDI Trustees Report*.

108. Robert N. Anderson, Ph.D., "United States Life Tables, 1998," *National Vital Statistics Reports*, Vol. 48, No. 18 (February 7, 2001), p. 2, Table A, at *www.cdc.gov/nchs/data/nvsr/nvsr48/nvs48_18.pdf* (June 2, 2004).

109. Life expectancies for Hispanics are higher than those for whites in long-term projections. However, since Hispanics may be of any race, CDA assumed Hispanic life expectancies to be the same as those for whites since these life expectancies are higher than those of African–Americans. See Frederick W. Hollmann, Tammany J. Mulder, and Jeffrey E. Kallan, "Methodology and Assumptions for the Population Projections of the United States: 1999–2100," U.S. Bureau of the Census, Population Division, *Working Paper* No. 38, January 13, 2000, p. 26, Table C, Middle Series, at *www.census.gov/population/www/documentation/twps0038.pdf* (June 2, 2004).
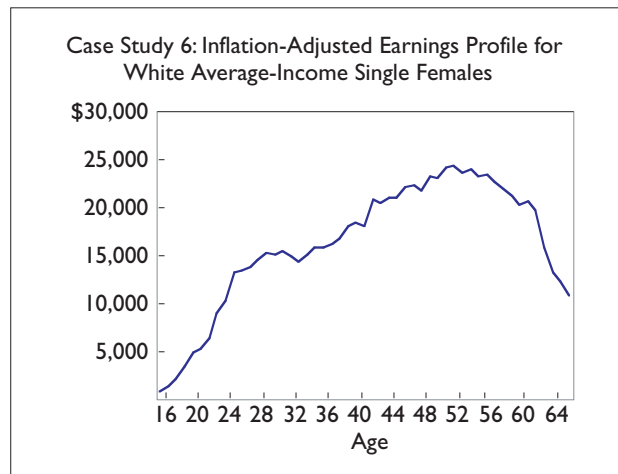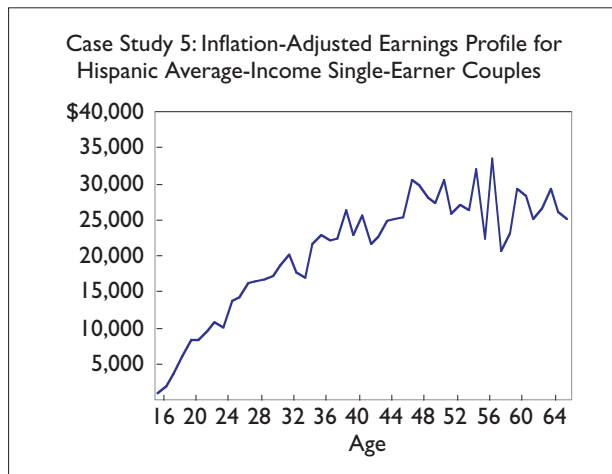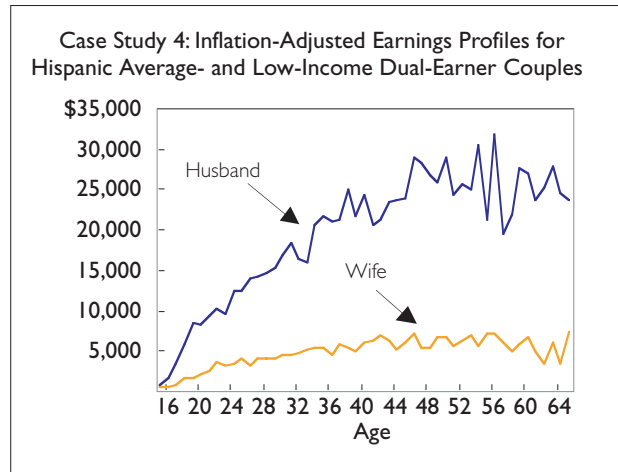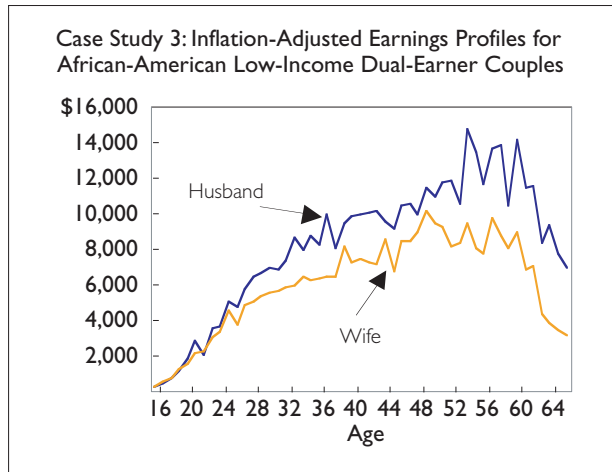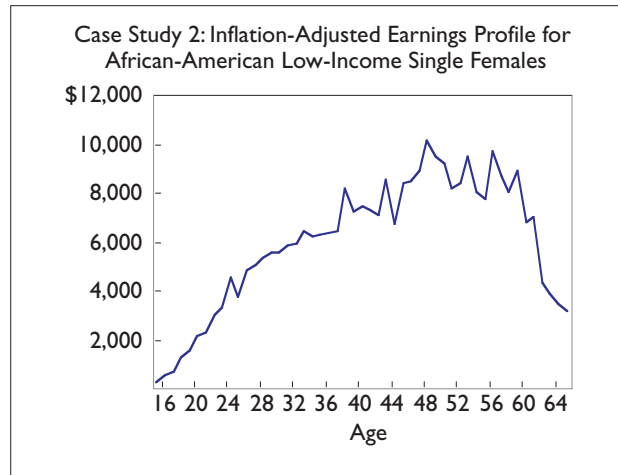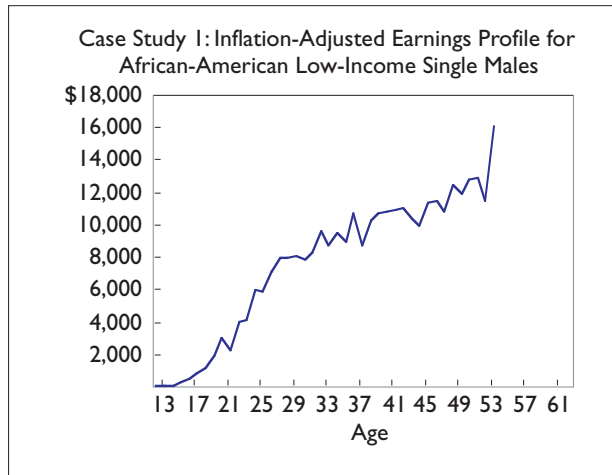
110. *2002 OASDI Trustees Report*, Table VI.E6.

111. *Ibid.*, Table V.B1.

112. SSA's Office of the Chief Actuary defines four income levels for purposes of analysis: low (equal to 45 percent of average); average (equal to the National Average Wage Index); high (equal to 160 percent of average); and maximum (equal to or above the OASDI taxable maximum). See Goss, "Appendix II," p. 176.

113. U.S. Bureau of the Census, *Census 2000 Supplementary Survey*, May 8, 2002, at *www.census.gov/c2ss/www/* (February 17, 2004).

114. Earnings data calculated by CDA for Hispanics are for Hispanics of any race.
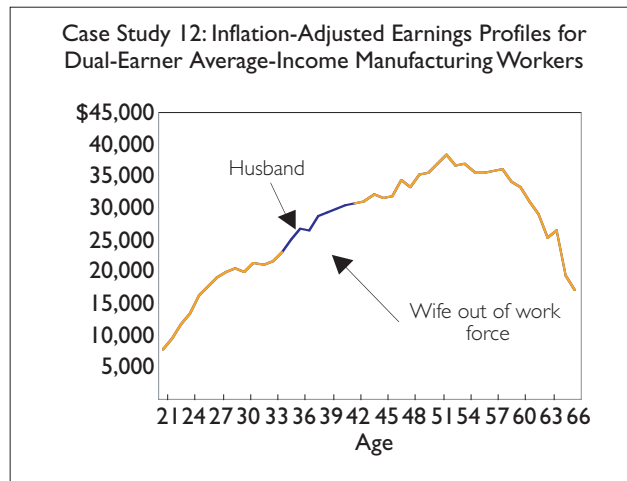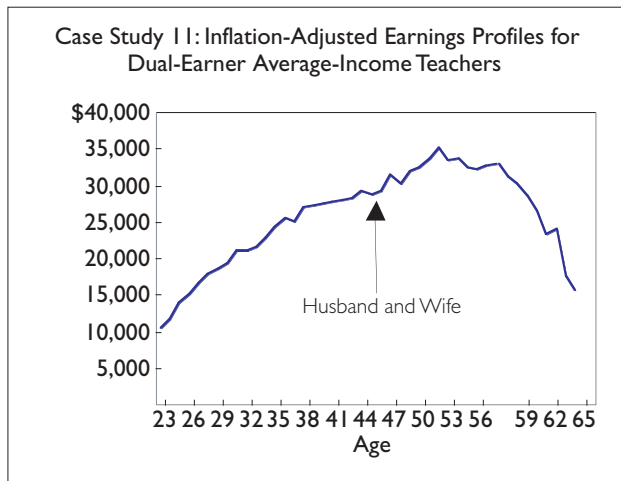
Inflation-Adjusted Age-Earnings Profiles of the First Generation of Earners in Case Studies

(Case Studies 1 to 6)

Case Study 1: Inflation-Adjusted Earnings Profile for African-American Low-Income Single Males

Case Study 2: Inflation-Adjusted Earnings Profile for African-American Low-Income Single Females

Case Study 3: Inflation-Adjusted Earnings Profiles for African-American Low-Income Dual-Earner Couples

Case Study 4: Inflation-Adjusted Earnings Profiles for Hispanic Average- and Low-Income Dual-Earner Couples

Case Study 5: Inflation-Adjusted Earnings Profile for Hispanic Average-Income Single-Earner Couples

Case Study 6: Inflation-Adjusted Earnings Profile for White Average-Income Single Females

Note: Earnings profiles shown are for first-generation earners only. The earnings profiles for third-generation earners are the same as for the first generation earners, except for an assumed growth in real wages during the intervening years.

Source: Center for Data Analysis calculations based on data from U.S. Census Bureau, *Census 2000 Supplementary Survey,* May 8, 2002.

Figure 5   CDA 04–06
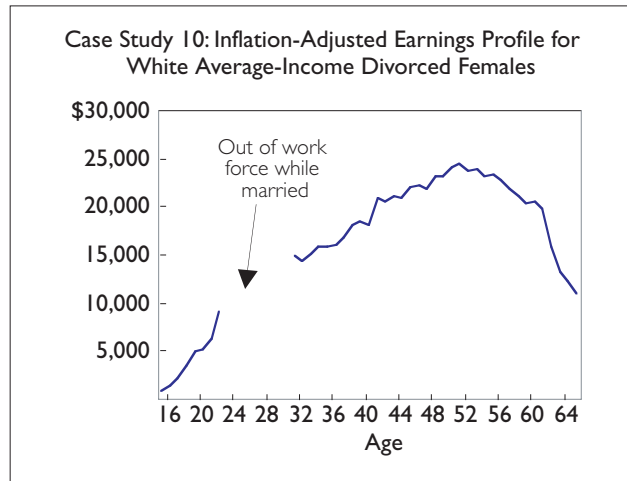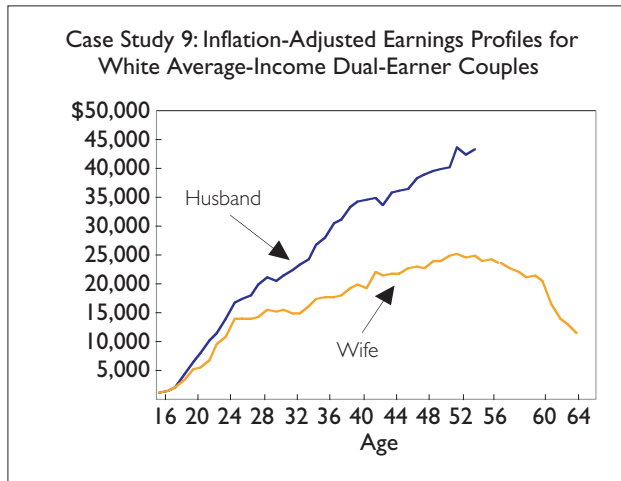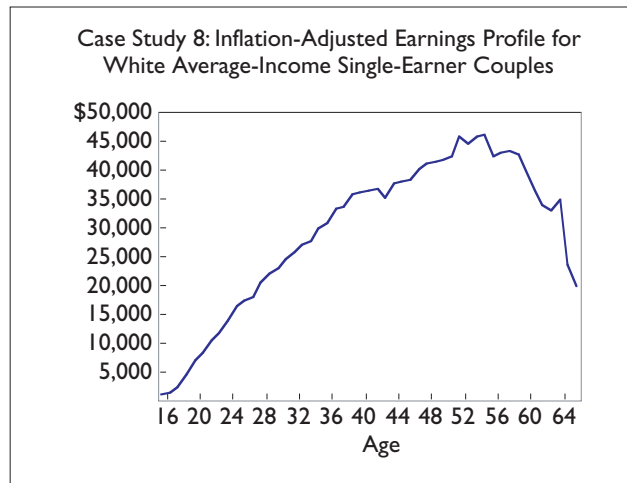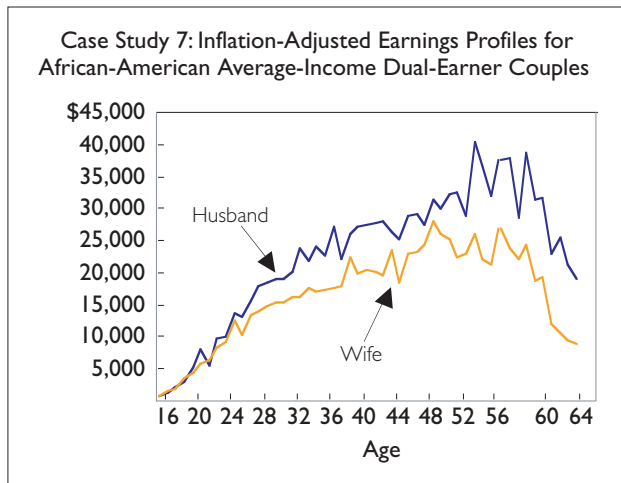
Inflation-Adjusted Age-Earnings Profiles of the First Generation of Earners in 12 Case Studies

(Case Studies 7 to 12)

Case Study 7: Inflation-Adjusted Earnings Profiles for African-American Average-Income Dual-Earner Couples

Case Study 8: Inflation-Adjusted Earnings Profile for White Average-Income Single-Earner Couples

Case Study 9: Inflation-Adjusted Earnings Profiles for White Average-Income Dual-Earner Couples

Case Study 10: Inflation-Adjusted Earnings Profile for White Average-Income Divorced Females

Case Study 11: Inflation-Adjusted Earnings Profiles for Dual-Earner Average-Income Teachers

Case Study 12: Inflation-Adjusted Earnings Profiles for Dual-Earner Average-Income Manufacturing Workers

Note: Earnings profiles shown are for first-generation earners only. The earnings profiles for third-generation earners are the same as for the first generation earners, except for an assumed growth in real wages during the intervening years.

Source: Center for Data Analysis calculations based on data from U.S. Census Bureau, *Census 2000 Supplementary Survey,* May 8, 2002.

Non-PRA Wealth

Non-PRA wealth held by workers was assumed to depend on their projected earnings, initial wealth, and rate of wealth accumulation. Initial wealth and the rate of wealth accumulation were estimated specifically for each worker and for each concept of non-PRA wealth, using data from the Census Bureau's Survey of Income and Program Participation.[117]

Non-PRA wealth was defined as the total of all assets minus all liabilities. The assets and liabilities are summarized into six basic categories:

- **Net real estate wealth.** The total market value of all real estate holdings minus outstanding mortgage liability. These holdings include primary residences, vacation homes, timeshares, and mobile homes.

- **Net non-PRA retirement wealth.** The total market value of all IRA, Keogh, 401(k), 403(b), and other defined contribution or voluntary retirement instruments (except for Social Security), net of any loans taken out of the accounts.

- **Net vehicle wealth.** The total market value of any cars, trucks, boats, recreational vehicles, and other vehicles, net of any debt secured by them.

- **Net stocks and mutual fund wealth.** The total market value of stocks and mutual funds held in taxable or nontaxable accounts, net of any margin debt.

- **Other net financial wealth.** All other financial instruments, including checking and savings accounts, certificates of deposit, U.S. Treasury bonds, corporate bonds, life insurance (cash or surrender value), and the balance of loans owed to the individual, net of debt secured by these financial instruments.

- **Unsecured debt.** All debt not subsumed in the foregoing five categories, including credit cards, unsecured lines of credit, and other short-term and long-term revolving debt.

PRA Contributions

For each year, PRA contribution rates were defined as a share of a worker's taxable annual earnings and were based on a linear scale determined by those earnings. The linear scale begins at 7 percent for $1 and ends at 2.5 percent for each year's maximum taxable earnings (otherwise known as the benefit base). The contribution rate and contribution dollar amount for each calendar year (*cy*) were determined by the following equation:

Equation 1

$$R_{cy} = 0.07 - 0.045 \; \frac{E_{cy-nom}}{M_{cy-nom}}$$

where R_{cy} is the contribution rate for a given calendar year, E_{cy-nom} is the worker's non-inflation adjusted (nominal) earnings for a calendar year, and M_{cy-nom} is the OASI maximum taxable wage (or the OASI benefit base) for a calendar year.

Figure 6 is a graphical representation of Equation 1 for 2004 using assumptions from the 2002 Trustees Report. The key points marked on the line represent the calculated PRA contribution rates for four income types as defined by Social Security. For example, a low-income worker with wages of $17,152 in 2004 has a PRA contribution rate of 6.16 percent. A worker earning the maximum taxable earnings of $92,400 in 2004 has a PRA contribution rate of 2.5 percent. Thus, the lower a worker's earnings, the larger the share of those earnings that the worker can contribute to his or her PRA.

Portfolio Rate of Return

The equities portion of the PRA portfolio was assumed to earn a constant annual inflation-adjusted rate of return of 7.0 percent. This rate fol-

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115. The difference in working ages attempts to reflect the nature of the employment of each case. In Case Study 11 (Dual-Earner Average-Income Teachers), the starting work age of 23 reflects required education. The starting work age of 21 in Case Study 12 (Manufacturing Workers) reflects a degree of technical or other training prior to full-time work.

116. CDA analysts adjust age-earning profiles to reflect the labor earnings of workers in the teaching and manufacturing occupations. The adjustments are based on the ratio between the average annual labor earnings of teachers and manufacturing workers, respectively, and those of all workers. These averages are calculated using data from U.S. Bureau of the Census, *Current Population Survey 2000*, March 2000, at *www.bls.census.gov/cps/cpsmain.htm.* (June 2, 2004).

117. U.S. Bureau of the Census, *Survey of Income and Program Participation*, 2000, at *www.sipp.census.gov/sipp* (June 2, 2004), 1996 panel, wave six, 1998 data.
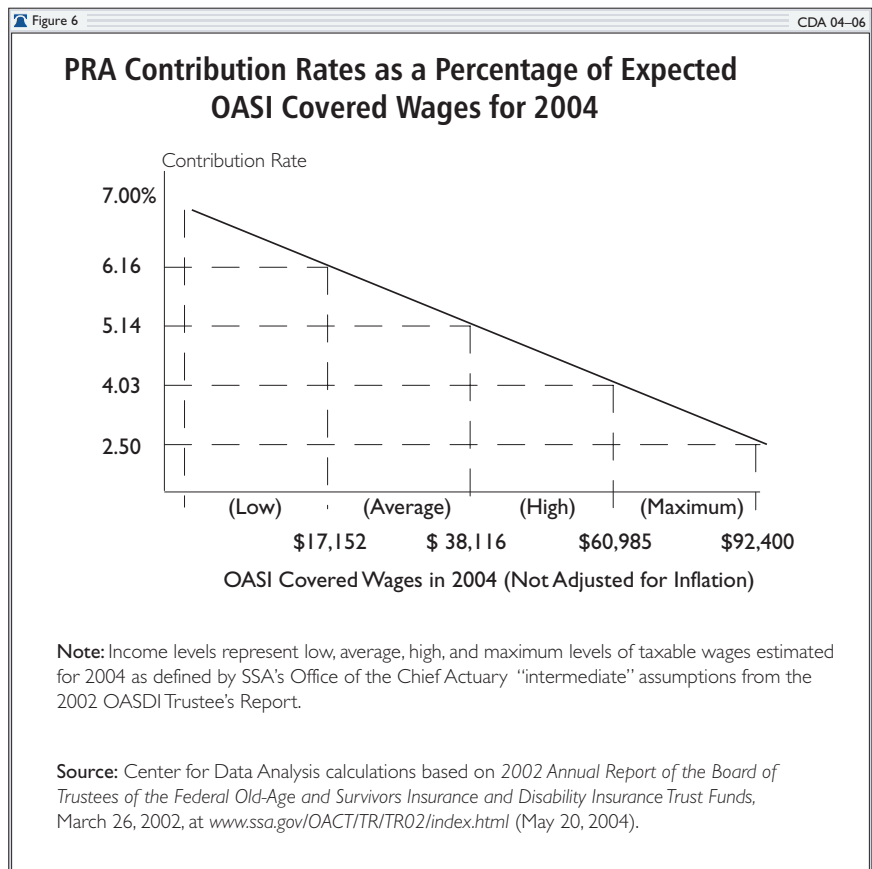
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lowed that assumed by the 1994–1996 Social Security Advisory Council.[118]

The long-term government bonds portion of the portfolio was assumed to earn at least 3.0 percent per year, net of inflation. This amount was calculated as follows:

- The 2002 Social Security Trustees report assumes that the average annual interest rate is a constant 6.0 percent after 2009 (without adjusting for inflation).[119]

- This interest rate is the rate that is assumed for the special obligation bonds that the Social Security Administration is legally required to keep in its trust fund portfolio. These bonds mature in no less than four years. Yields on 10-year Treasury bonds are therefore at least as high as the yield on special obligation bonds.[120]

- The Trustees assume that the Consumer Price Index (CPI) grows at a steady rate of 3.0 percent after 2005.[121]

- An assumed inflation-adjusted rate of return on the 10-year Treasury bond portfolio was derived by subtracting the 3.0 percent growth in the CPI from the 6.0 percent average annual interest rate assumed by the Social Security Trustees on special obligation debt.

PRA Wealth

All workers were assumed to have a zero PRA balance at the end of 2002, prior to the plan's assumed effective date of January 1, 2003. For every year of a worker's remaining work life, his or her PRA was assumed to increase both from the

PRA Contribution Rates as a Percentage of Expected OASI Covered Wages for 2004

Note: Income levels represent low, average, high, and maximum levels of taxable wages estimated for 2004 as defined by SSA's Office of the Chief Actuary "intermediate" assumptions from the 2002 OASDI Trustee's Report.

Source: Center for Data Analysis calculations based on *2002 Annual Report of the Board of Trustees of the Federal Old-Age and Survivors Insurance and Disability Insurance Trust Funds,* March 26, 2002, at *www.ssa.gov/OACT/TR/TR02/index.html* (May 20, 2004).

compounding of interest on the previous year's balance and from new deposits. All calculations were based on end-of-year values. Workers born before January 1, 1958, were excluded from participation in the plan.

The plan assumed that workers can invest their PRAs only in indexed mutual funds. Workers were assumed to invest half their PRAs in stock mutual funds and half in long-term government bond funds. The projected real rate of return on the equity funds was a constant 7.0 percent,[122] and the projected real rate of return on bonds was a constant 3.0 percent.[123] The blended real rate of return on the PRA was 5.0 percent before an administration fee of 0.3 percent was applied to the account. Thus, the PRA grew at a net real interest rate of approximately 4.7 percent.[124]

118. Goss, "Appendix II," p. 171.

119. *2002 OASDI Trustees Report*, Table V.B2.

120. 1999 Technical Panel of Assumptions and Methods, *Report to the Social Security Advisory Board*, Appendix 5, November 1999, s.v. "Special Public-Debt Obligation," at *www.ssab.gov/Rpt99_V.html#14370* (June 2, 2004).

121. *2002 OASDI Trustees Report*, Table V.B1.

122. Goss, "Appendix II," p. 170.

Social Security Benefits

Current Law. Current-law benefits are the maximum benefit level that can be paid, using current benefit calculation formulas and tax rates, without violating the SSA's congressional mandate to keep the OASI Trust Fund from going into debt. Current-law benefits for the case studies were calculated in two steps.

The first step used the earnings projections made for each worker. Monthly benefits were calculated based on earnings in the manner currently specified by SSA,[125] and the results were checked against the 2002 version of SSA's benefits calculator.[126] Spousal and survivor benefits were included for married couples and followed current law. Under current law, a spouse is entitled to benefits if his or her own calculated primary insurance amount (PIA) is less than half of the higher-earning spouse's PIA.[127] Otherwise, working spouses get their own full PIA benefit. Under current law, a surviving spouse also qualifies for, at most, two-thirds of the combined retirement benefits of the couple when both were alive.[128]

The second step was to adjust benefits to account for the estimated shortfall in funding. SSA projections show that, after 2043, benefits cannot be paid at the level indicated (using current formulas) without an additional source of revenue for the system.[129]

The revenue shortfall was estimated for each year following projected trust fund exhaustion using data from Table IV.B3 of the 2002 Trustees Report.[130] For each such year, benefit reductions were calculated as the absolute value of the ratio between the balance rate and the income rate.[131] This calculation reduced the benefit level so that it was consistent with projected OASI revenue.

Current Law with Revenue Increases. Current-law benefits with revenue increases were calculated by applying currently used benefit formulas and assumptions. However, benefits were not reduced even for the years when a shortfall is predicted. The calculations incorporated the assumption that additional revenue was available to meet projected costs. For years prior to projected trust fund exhaustion, current-law benefits were identical to current-law benefits with revenue increases.

Sample Social Security Reform

Total Reform Social Security Retirement Benefits. Total Social Security retirement benefits under the sample reform amounted to either the lesser of the current-law benefit with revenue increases or 200 percent of the poverty threshold for an individual age 65 who is not living with dependent children.[132] Under the sample reform plan, benefits would be paid through two components. One is a government-paid portion, funded through payroll taxes on a pay-as-you-go basis. The other portion is paid for by a PRA annuity, which each worker purchased with funds from his or her PRA account. Together, these two components summed to the total level of reform Social Security retirement benefits.[133]

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123. *2002 OASDI Trustees Report*, Table V.B1 and Table V.B2.

124. The estimated portfolio rate of return assumed by the President's Commission to Strengthen Social Security, *Strengthening Social Security and Creating Personal Wealth for All Americans*, p. 97.

125. For an explanation of the calculation of the Primary Insurance Amount, see Social Security Administration, "Primary Insurance Amount," updated October 16, 2003, at *www.ssa.gov/OACT/COLA/piaformula.html* (June 2, 2004).

126. Only first-generation retiree benefits were checked with this calculator, since it does not go beyond 2080. Other quality checks were used to ensure the accuracy of third-generation calculations. For the 2003 version of this calculator, see Social Security Administration, Office of the Chief Actuary, "Social Security Detailed Calculator," updated June 16, 2003, at *www.ssa.gov/OACT/ANYPIA/anypia.html* (June 2, 2004).

127. In such cases and cases in which only one spouse qualifies for a PIA, the additional spousal benefits equal one-half of the working spouse's PIA. See Social Security Act, P.L. 74–271 (49 Stat. 620), August 14, 1935, Title II, Section 202 (b)(2) and (c)(2).

128. *Ibid.*, Title II, Section 202 (e)(2)(D) and (f)(3)(D).

129. This prediction is incorporated in the SSA's intermediate projection for the OASI Trust Fund ratio for 2044 and thereafter. *2002 OASDI Trustees Report*, Table VI.E6.

130. *Ibid.*

131. *2002 OASDI Trustees Report*, Table VI.E2.

Government-Paid Portion of Retirement Benefits. Each worker's government-paid Social Security benefit was calculated in two steps. The first step used a sample reform benefit formula similar to the current system, except that it included PRA-adjusted bend points and bend-point percentages. Under the sample reform benefit formula, an additional bend point and bend-point percentage is added to the current two bend points and three bend-point percentages. The lowest reform plan bend point is the same as the currently used lowest bend point. The second-highest bend point is set at five times the first bend point. The third is set at 1.3 times the second-highest bend point. The resulting bend point percentages are 0.91 for the first segment, 0.13 for the second segment, 0.05 for the third segment, and 0.01 for the final segment.

The second step used a benefit retention rate (BRR) to adjust the amounts calculated in the first step. The BRR varied with birth year and ranges between 89 percent and 29 percent for singles and dual-earning couples in which neither spouse qualified for the spousal benefit. [134] Workers born in 1958—the first birth year of those eligible to enter the reform plan—have a benefit retention rate of 89 percent. The rate of benefit retention declines linearly by an additional two percentage points for every later year of birth, until reaching 29 percent for those born in 1988. Thus, earners born in 1965, regardless of income level, have a benefit retention rate of 75 percent, while workers born in 1988 or later have a benefit retention level of 29 percent.

Figure 7 is a graphical representation of the BRR for singles and dual-earning couples by birth year.

The government-paid portion of retirement benefits for each worker is equal to the benefit calculated using the lower of either the sample reform plan benefit formula (adjusted for the worker's benefit retention level) or the total Social Security retirement benefit.

PRA Annuity Portion of Social Security Benefits. When the government-paid benefit was less than the total reform plan benefit, the difference was paid through a PRA annuity. The PRA annuity benefit is the minimum amount needed to eliminate the difference between the total reform plan benefit and the government-paid benefit.

PRA Annuity. The sample reform plan requires workers to purchase an annuity upon retirement if their government-paid benefit is less than their total benefit. PRA annuity price calculations are based on the methods used by the federal government's Thrift Savings Plan (TSP). [135] The price of a TSP annuity varies according to the prevailing "current interest rate index," which TSP calculates as "a moving average of the 10-year U.S. Treasury rate." [136] As described above, CDA analysts used the Trustees' assumption of a 6.0 percent interest rate on 10-year U.S. Treasury bonds and therefore applied this yield as the "current interest rate index."

Married couples use part of their PRA funds to purchase an annuity providing an inflation-adjusted stream of monthly payments, plus monthly payments for a surviving spouse. The surviving spouse's income stream from the annuity is two-thirds (66.7 percent) of the retired couple's previous income stream. [137] The price of such an annuity is calculated by applying a monthly annu-

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132. For each married couple, total combined benefits are the lower of either Social Security current-law benefits (with revenue increases) or 300 percent of the poverty threshold for single persons aged 65 or older who are not living with dependent children. Under this structure, the poverty criterion for individual retiring workers is set at 200 percent of the poverty threshold, while the criterion for married couples is set at 238 percent of the married-couple poverty threshold (for couples aged 65 or older, not living with dependent minors).

133. If the maximum PRA annuity that the retiring worker could purchase is insufficient to cover the difference between total Social Security benefits and the government-paid portion, an additional amount is added to the government-paid portion to make up the difference.

134. For married couples in which one member qualifies for the spousal benefit, the BRR was adjusted upward. The adjustment is made by taking the BRR corresponding to the year the higher-earning spouse is eligible to retire with full benefits, reducing it by one-third, and then adding 33.3 percent. This adjustment raises the BRR and increases the family's wealth-creation opportunities.

135. The basic methods followed are described in Federal Retirement Thrift Investment Board, "Appendix: Estimating a Monthly Annuity Payment," in *Thrift Savings Plan: TSP Annuities*, June 2003, pp. 9–10 at *www.tsp.gov/forms/tspbk05.pdf* (February 17, 2004).
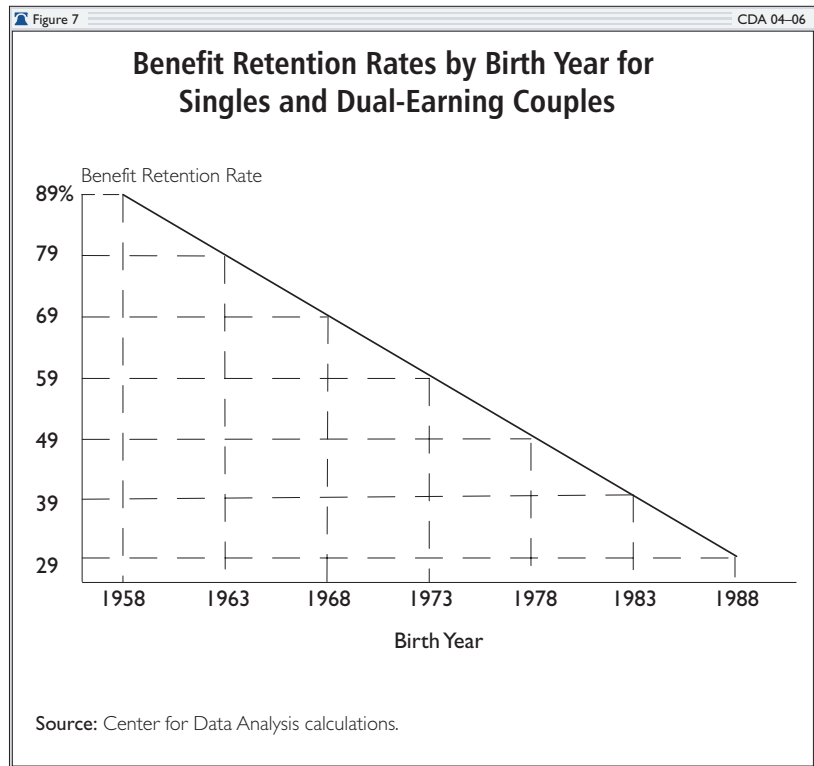
136. *Ibid.*, p. 8.

ity factor. However, the TSP does not currently offer an annuity paying 66.7 percent to a surviving spouse, and therefore provides no such monthly annuity factor. CDA analysts estimated a monthly annuity factor for an annuity that would pay surviving spouse benefits at a 66.7 percent level if TSP offered such an annuity. Then CDA analysts used this monthly annuity factor to calculate the price of the TSP-type annuity.[138]

Very-Low-Income Workers. Very-low-income earners—particularly those whose PIA is lower than the first bend point—receive special consideration under the reform proposal, allowing such retiring workers to keep more funds in their PRA than would otherwise be the case. This consideration takes the form of an adjustment to their BRR. The adjusted BRR is based on the values of the special minimum PIA and the first bend point[139] used by the SSA in calculating benefits. Equation 2 shows the adjusted BRR for these workers:

Equation 2

$$BRR_{adjusted} = 1 - \left[(1 - BRR_{unadjusted}) \left(1 - \frac{2(B - AIME)}{3(B - SMPIA)} \right) \right]$$

In Equation 2, $BRR_{adjusted}$ equals the benefit retention rate after the adjustment is applied. $BRR_{unadjusted}$ equals the unadjusted benefit retention rate, which is determined by year of birth alone. In the equations, all BRR values are expressed as a positive number less than one. B is the lowest bend point corresponding to the worker's year of birth, $AIME$ is the worker's average indexed monthly earnings, and $SMPIA$ is the special minimum PIA corresponding to the worker's year of birth.[140]

For example, a single worker born in 1959 and retiring in January of 2026 with full benefits after more than 30 years of covered employment would have an AIME of $1,170. This AIME is low enough to qualify for the adjustment described in Equation 2. The projections in the 2002 Trustees Report indicate that the lowest bend point corresponding to a worker retiring with full benefits in 2026 is $1,272, while the corresponding special minimum PIA for workers with 30 or more years

Figure 7 — CDA 04–06

Benefit Retention Rates by Birth Year for Singles and Dual-Earning Couples

Benefit Retention Rate

Source: Center for Data Analysis calculations.

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137. A two-thirds survivor's benefit was chosen to mirror Social Security's current survivor's benefit.

138. CDA analysts used linear interpolation to approximate the desired monthly annuity factor, using the two monthly annuity factors corresponding to the 50 percent and 100 percent joint and survivor annuities that TSP currently offers. The monthly annuity factor used to price a 50 percent joint annuity (in TSP terms, "increasing payment—no cash refund: 50 percent to survivor") for a couple of insured retirees (both aged 67) is 6.32. The factor used to price a 100 percent annuity (in TSP terms, "increasing payment—no cash refund: 100 percent to survivor") for two insured retirees (both aged 67) is 7.61. Linear interpolation between these two factors yields a monthly annuity factor of 7.18.
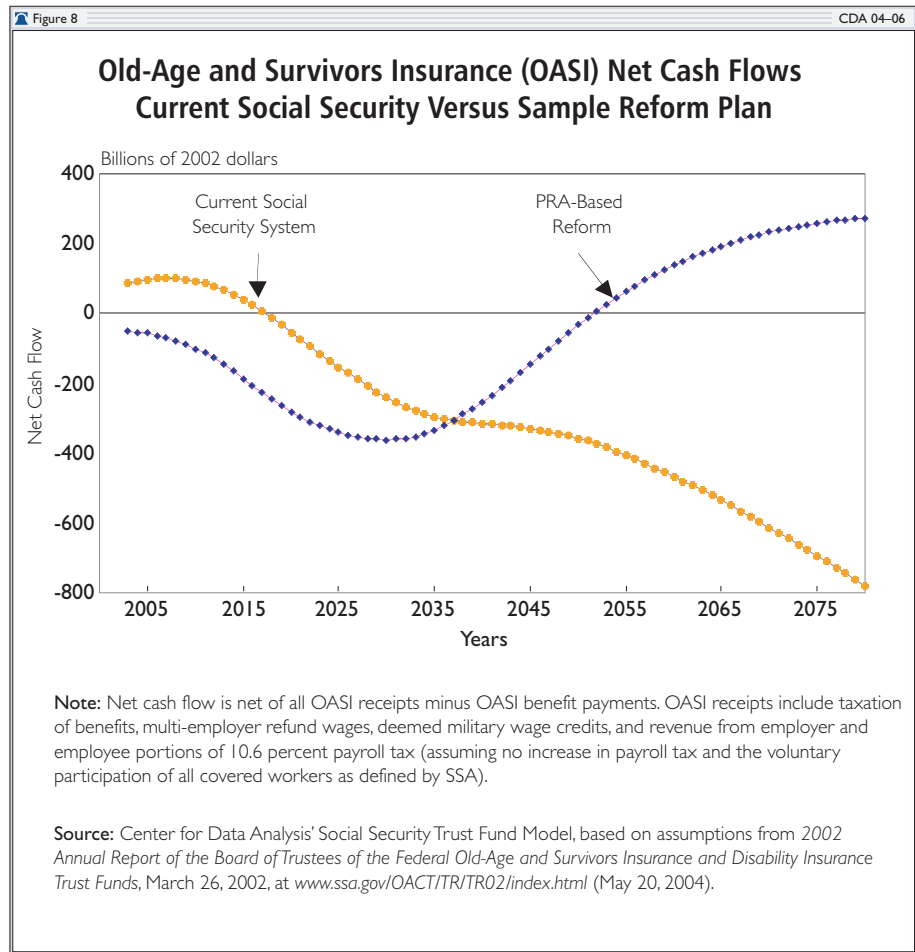
139. Bend points and the AIME are components of SSA's calculation of current-law Social Security benefits. The AIME is an attempt to view a worker's lifetime earnings in the context of the overall national average wage. Bend points are used to provide proportionally higher benefits to lower-income workers.

140. The SSA calculates a worker's PIA based on the year the worker reaches "eligibility" (age 62 under current law). The values used in calculating the benefit retention adjustment are the values for the year in which a worker reaches age 62. See Social Security Act, P.L. 74–271 (49 Stat. 620), August 14, 1935, Title II, Section 202(a)(3)(B)(i), (b)(2)(B)(iii).

of covered employment is $1,046. Under the sample reform plan, the unadjusted benefit retention level for workers born in 1959 is 87.0 percent. Applying the adjustment in Equation 2, the benefit retention level is increased to 95.24 percent.

Retirement Benefit Options

- **Additional monthly payments.** Upon retirement, workers may purchase an annuity that adds additional monthly benefits to those already paid to the worker as total retirement benefits. In this case, a worker receives monthly payments in addition to the sum of the government and PRA annuity portions of Social Security benefits. The maximum amount of additional monthly payments that the worker could buy is listed in the case study tables and in Table 13 under the heading "Extra Monthly Benefit." (See Appendix 1.)

- **Nest egg.** Alternatively, the worker could withdraw all or part of the funds remaining in his or her PRA after purchasing the PRA annuity and use them for a purpose of his or her choosing. The maximum amount that could be withdrawn is shown in the tables under the heading "Nest Egg at Retirement."

- **Bequest.** The retiring worker or household can also save the PRA balance that remains after the PRA annuity purchase and leave it as a bequest to heirs. The remaining PRA balance is assumed to grow during the retirement years, continuing to yield the 4.7 percent real rate of return. The maximum amount of this bequest is shown in the case study tables and Table 13 under the heading "Bequest to Future Generation." (See Appendix 1.)

Figure 8 CDA 04–06

Old-Age and Survivors Insurance (OASI) Net Cash Flows Current Social Security Versus Sample Reform Plan

Note: Net cash flow is net of all OASI receipts minus OASI benefit payments. OASI receipts include taxation of benefits, multi-employer refund wages, deemed military wage credits, and revenue from employer and employee portions of 10.6 percent payroll tax (assuming no increase in payroll tax and the voluntary participation of all covered workers as defined by SSA).

Source: Center for Data Analysis' Social Security Trust Fund Model, based on assumptions from *2002 Annual Report of the Board of Trustees of the Federal Old-Age and Survivors Insurance and Disability Insurance Trust Funds*, March 26, 2002, at *www.ssa.gov/OACT/TR/TR02/index.html* (May 20, 2004).

OASI Trust Fund Estimates

The Social Security Trust Fund estimates for the sample plan were calculated using CDA's Social Security Trust Fund (SSTF) model. The model is based on published and supplemental data from the Social Security Administration and covers the period through calendar year 2080. The model also uses CDA-calculated data based on information from special tabulations of the SSA and from SSA's Office of the Chief Actuary.[141] The model analyzes Social Security reform plans by tracking the income and benefits for 120 birth-year cohorts for each calendar year covered by the analysis.[142] The results indicate a cumulative deficit of $11 trillion under the sample reform plan versus $24 trillion under the current Social Security system.[143]

Figure 8 shows the net cash flow of OASI through 2080 under current Social Security and the sample reform plan. These estimates are typical for many PRA reform plans that produce an early series

141. The model uses data based on the "intermediate" assumptions of the *2002 OASDI Trustees Report* and other unpublished data from the Office of the Chief Actuary.

of cash flow deficits during the transition period, followed by substantial surpluses over the long run.

Simulations Using Fluctuating Rates of Return

The case study results shown in this paper are based on a constant rate of return for the PRA portfolio. In order to test how fluctuating rates of return affect the results, CDA analysts used a set of 1,000 scenarios to simulate wealth creation for each case study. This simulation was performed using a computerized random number generator making independent and equiprobable draws from a 76-year history of normalized nominal yields and inflation-adjusted total returns on long-term government bonds, and normalized inflation-adjusted total returns on large company stocks.[144] The normalization process modified the historical returns, as recorded in Ibbotson (averaging 5.3 percent for the nominal yield and 2.72 percent for the inflation-adjusted total return on long-term government bonds, and 7.4 percent for the total return on large company stocks), to match the average portfolio returns assumed in the non-stochastic portion of this report (6.0 percent for the nominal long-term government bond yield, 3.0 percent for the total return on the bonds, and 7.0 percent for stocks). Each of the 108-year series was considered a scenario containing two rates of return for each year (one for the total return on the bond portion of the portfolio and another for the total return on the equity portion of the portfolio) and a bond yield for each year. Independent draws were made for each year and used to recompute the results for workers in the 12 case studies. Each case study's results in 1,000 simulations were stored and evaluated.

All first-generation workers in the case studies created wealth in at least 60 percent of the simulations. Third-generation workers who fully invest their bequest create wealth in over 80 percent of the simulations. In addition, over 60 percent of the simulations show wealth creation for all third-generation workers that do not invest any of their bequest.

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142. The SSTF model accounts for the adjustment in the benefit retention ratio for single-earning married couples (i.e., couples in which one spouse earns spousal benefits). However, the SSTF model does not account for adjustments in the benefit retention ratio for workers who qualify for the Special Minimum PIA or for workers whose AIME is lower than the first bend point. Only 135,000 out of a total of 39 million OASI beneficiaries qualified for the special minimum PIA at the end of 2001. These recipients received a monthly benefit averaging $608, accounting for $984 million out of $378 *billion* in total OASI benefit payments (0.26 percent of the total amount). Likewise, the sliding adjustment in the benefit-retention ratio for workers with PIAs lower than the first bend point would likely exert a small effect on overall OASI fund balances. See Social Security Administration, *Annual Statistical Supplement, 2002*, Tables 5.A1 and 5.A8, pp. 170 and 191, and *2002 OASDI Trustees Report*, Table II.B1.

143. The unfunded liability of the sample reform plan was estimated to be about 4 percent lower than under current Social Security ($4.0 trillion versus $4.2 trillion, assuming a 3 percent discount rate).

144. Ibbotson Associates, *Stocks, Bonds, Bills, and Inflation: 2003 Yearbook, Market Results for1926–2002* (Chicago, Ill.: Ibbotson Associates, 2003), Table 4-2.

LIST OF ACRONYMS

AIME	average indexed monthly earnings
BRR	benefit retention rate
CDA	Center for Data Analysis at The Heritage Foundation
CPI	Consumer Price Index
CSD	Center for Social Development
OASDI	Old-Age, Survivors, and Disability Insurance
OASI	Old-Age and Survivors Insurance
PIA	primary insurance amount
PRA	personal retirement account
SMPIA	special minimum primary insurance amount
SSA	Social Security Administration
SSTF	Social Security Trust Fund
TSP	Thrift Savings Plan