

**A REPORT OF
THE HERITAGE CENTER
FOR DATA ANALYSIS**

**SOCIAL SECURITY'S
RATE OF RETURN**

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What can Americans expect in future Social Security retirement benefits? A Heritage Foundation study reveals that the Social Security system's rate of return for most Americans will be vastly inferior to what they could expect from placing their payroll taxes in even the most conservative private investments. For the low-income African-American male age 38 or younger, the news is particularly grim: He is likely to pay more into the Social Security system than he can ever expect to receive in benefits after inflation and taxes. Staying in the current system will likely cost him up to \$160,000 in lifetime income in 1997 dollars.

If Americans were allowed to direct their payroll taxes into safe investment accounts similar to 401(k) plans, or even super-safe U.S. Treasury bills, they would accumulate far more money in savings for their retirement years than they are ever likely to receive from Social Security. For example:

- **Social Security pays a very low rate of return for two-income households with children.** Social Security's inflation-adjusted rate of return is only 1.23 percent for an average household of two 30-year-old earners with children in which each parent made just under \$26,000 in 1996.¹ Such couples will pay a total of about \$320,000 in Social Security taxes over their lifetime (including employer payments) and can expect to receive benefits of about \$450,000 (in 1997 dollars, before applicable taxes) after retiring at age 67, the retirement age when they are eligible for full Social Security Old-Age benefits.² Had they placed that same amount of lifetime employee and employer tax contributions into conservative tax-deferred IRA-type investments—such as a mutual fund composed of 50 percent U.S. government Treasury bills and 50 percent equities—they could expect a real rate of return of over 5 percent per year prior to the pay-

1. This rate of return calculation assumes that both adults were born in 1967.

2. Total taxes paid and benefits received are expressed in 1997 inflation-adjusted dollars. Social Security taxes are defined as Old-Age and Survivors Insurance (OASI) contributions, less (where applicable) an amount which would buy a life insurance policy equivalent to the value of the coverage provided by (pre-retirement) Survivors Insurance. In 1997, the tax rate for OASI is 10.7 percent of all wages and self-employment income less than \$65,400, as of year-end 1997. Unless stated otherwise, a discount rate is not applied to these amounts.

ment of taxes after retirement. In this latter case, the total amount of income accumulated by retirement would equal approximately \$975,000 (in 1997 dollars, before applicable taxes).

- **The rate of return for some ethnic minorities is negative.** Low-income, single African-American males born after 1959 face a *negative* real rate of return from Social Security. For every dollar he has paid into Social Security, a low-income, single African-American male in his mid-20s who earned about 50 percent of the average wage, or \$12,862, in 1996 can expect to get back less than 88 cents. This negative rate of return translates into lifetime cash losses of \$13,377 (in 1997 dollars) on the taxes paid by the employer and employee.

African-American females typically live longer than their male counterparts, yet even they have a rate of return lower than the general population. An African-American single mother 21 years old who in 1996 made just under \$19,000 (the average for African-American females) can look forward to a real rate of return on her Social Security taxes of only 1.2 percent. Under conservative assumptions, if she had saved those same tax dollars in a private investment account composed of government bonds, she would have received a real return of around 3 percent per year. With a mixed portfolio of bonds and equities, she could expect a return on her investments of at least 4.35 percent. This means that even with a low risk/low yield portfolio composed entirely of Treasury bills, this single mother could have generated at least \$93,000 more in retirement income (in after-tax 1997 dollars) than she would enjoy under Social Security.³

- **The rate of return has a damaging impact on communities.** The cumulative effects of Social Security's dismal rates of return can be appreciated by considering a hypothetical community.

Key Assumptions and Methodology (For details, see Appendix)

- "Rate of Return" is a statistic commonly used to measure the income performance of an investment. It represents the annual rate of increase in the value of an investment and is usually expressed in percentage terms.
- All calculations are adjusted for inflation.
- Both the employee's and employer's share of payroll taxes are included in the calculations.
- Unless otherwise noted, after-tax Social Security benefits and private investment returns are used for comparisons. That is, applicable income taxes have been subtracted from Social Security retirement benefits (in the few cases where those benefits are taxable) and from the retirement incomes derived from private retirement savings.
- The estimated insurance cost of pre-retirement survivors benefits is subtracted from Old-Age and Survivors Insurance (OASI) payroll taxes. Thus, only retirement income taxes and benefits are compared.
- Future increases in life expectancy and wages are taken into account and, unless otherwise stated, are consistent with the intermediate assumptions of the Board of Trustees of the OASI trust fund.
- Unless otherwise indicated, the "private" investment alternatives described in this study are based on tax-deferred IRA-type accounts, but with initial contributions not tax-deductible.

3. Assuming that upon retirement this single woman is able to annuitize the lump sum at retirement that she accumulated at a real interest rate of 2.7 percent over 15 years. The current federal income tax rates (with current rate structure, exemptions, tax bands, and deductions adjusted by inflation as mandated in current legislation) are applied against this annuity income.

Suppose there existed a city entirely of 50,000 young, married double-earner couples in their thirties, with each person earning the average wage, and each couple had two children. The cumulative amount such a community could save in a private pension plan by retirement with the same dollars they currently pay in Social Security taxes is over \$26 billion *greater* than these couples will get in Social Security benefits. This amount is roughly equal to the amount the federal government currently spends on food stamps each year for the whole nation, and nearly as much as direct federal spending on education.⁴

WHY RATES OF RETURN MATTER

The defenders of Social Security argue that rates of return are irrelevant to the Old-Age and Survivors Insurance (OASI) portions of the program. Social Security, they suggest, was intended to provide a basic but decent retirement income to beneficiaries and stop-gap incomes for surviving spouses. Future Social Security beneficiaries, they argue, should be saving now for additional retirement income to supplement benefits from the Old-Age and Survivors Insurance. Thus, they argue that comparing rates of return on private pension investments with those from a public program intended to pay out during retirement at least 35 percent of the wages an average worker earned prior to retirement is like comparing apples with oranges.⁵

This line of reasoning contains a fundamental flaw. If Social Security taxes were low enough to allow workers to save these additional dollars for their retirement, apologists for the system might conceivably be correct in characterizing Social Security as a pension program of last resort. But Social Security taxes are not low, and they are crowding out the ability of most low- and middle-income Americans to save for retirement. Thus,

How a Small Difference in Returns Means Big Differences in Cash

The power of compound interest over a career can translate even small differences in the rate of return into large swings in lifetime savings. For example, the expected annualized real rate of return for Social Security is 1.2 percent for an average-income, 21-year-old African-American single mother of two who throughout her lifetime makes about 100 percent of the average earnings for African-American female workers (\$18,650 in 1996).¹

Had she been allowed to invest her payroll taxes in highly conservative investments, she could expect to make a 3 percent real rate of return on a portfolio consisting entirely of Treasury bills, or a 4.35 percent real rate on a portfolio of 50 percent Treasury bills and 50 percent equities.

Investing her taxes entirely in Treasury bills would give her an annualized rate of return that is almost two percentage points higher than she could expect from Social Security, and allow her to earn—during her lifetime—\$93,330 more in terms of inflation-adjusted, after-tax 1997 retirement income than she can expect to receive in Social Security benefits.

Investing in the mixed equity/bond portfolio would yield a rate of return 3.14 percentage points greater than she could receive from Social Security and would allow her to accumulate by retirement a lump sum that, in after-tax 1997 dollars, is \$192,073 more than her lifetime projected value of Social Security benefits.

1. The Social Security Administration's "Average Wage Index" as defined in the *1997 Annual Report of the Federal Old-Age and Survivors and Disability Trust Funds*, Table III.B1, p. 178. A ratio of 72.5 percent of average earnings is assumed for the African-American single mother, which was the proportion of average earnings made by African-American females at the end of 1996 as reported in U.S. Department of Labor, "Usual Weekly Earnings of Wage and Salary Workers, Fourth Quarter, 1996," January 24, 1997, Table 1.

4. Scott A. Hodge, ed., *Balancing America's Budget: Ending the Era of Big Government* (Washington, D.C.: The Heritage Foundation, 1997).

5. See Social Security Administration, "Findings and Recommendations," *1997 Annual Report of the Board of Trustees of the Federal Old-Age and Survivors Insurance and Disability Insurance Trust Funds*, Communication from the Board of Trustees of the Federal Old-Age and Survivors Insurance and Disability Insurance Trust Funds, House Doc. 104-228 (Washington, D.C.: U.S. Government Printing Office, 1997), Table R1, p. 36.

the rate of return on these taxes is very important, especially for those Americans for whom Social Security is their main retirement savings.

Crowding Out Savings. As payroll taxes have risen, many more Americans have few dollars left over for supplemental retirement investment. Over the past 25 years, Congress and the President have increased Old-Age and Survivors benefits so often and so much that today the high payroll taxes needed to pay those current benefits crowd out private retirement investments.⁶ In 1972, the average worker (with his or her employer) paid 8.1 percent in Old-Age and Survivors payroll taxes on the first \$9,000 of wages and salary (equivalent to about \$21,500 in 1997 dollars);⁷ in 1997, that worker paid 10.7 percent on the first \$65,400 of “earned” income (or the first \$27,340 in 1972 dollars).⁸ Moreover, between 2020 and 2046, the Old-Age and Survivors tax rate will have to rise to 14.4 percent from today’s 10.7 percent if benefit costs are not cut.⁹

Because of rising payroll taxes for retirement, increasing numbers of poor and middle-income workers do not have the after-tax funds needed to create private supplemental pension investments.¹⁰ In fact, Social Security taxes now consume as much of the average family’s budget as do outlays for housing, and nearly three times more than annual health care expenses.¹¹

Because of the long-term financial problems of the Social Security trust fund, calculations of the

rate of return for Social Security are likely to prove optimistic. The fact is that Social Security will not be able to pay out old-age benefits to the “Baby Boom” generation without additional tax increases on workers or benefit cuts. These tax increases or benefit cuts will further reduce the Social Security rates of return for those workers currently in their twenties, members of the so-called Generation X, and their children. As Social Security’s rates of return fall, the relevance of rates of return on private pensions rises. That is, members of Generation X are not simply going to ignore the decaying prospects for adequate income during their retirement years. Rather, they will insist increasingly on more opportunities for creating pensions to supplement Social Security’s Old-Age benefits. Thus, comparing rates of return for private and public pensions will become even more important to each new generation.

In addition, the rate of return is important because the crowding-out effects of high Social Security taxes on private savings for low- and middle-income workers affect the wealth that can be left to the next generation. Few aspects of Social Security are as unintended or as damaging to low- and middle-income workers as the squeeze that high payroll taxes put on the formation of intergenerational wealth transfers. The inability of poor workers to accumulate enough savings to leave a nest egg to their children can mean that their children will be as dependent as their parents could be on their monthly Social Security check. It means

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6. See Martin Feldstein, “The Missing Piece in Policy Analysis: Social Security Reform,” *A.E.A. Papers and Proceedings*, May 1996, pp. 1–14.
 7. Social Security Administration, *1997 Annual Report of the Board of Trustees*, Table II.B1, pp. 34–35. The percentage of wages and salaries taxed to support the Old-Age and Survivors and Disability Insurance programs (Social Security taxes) equals the 50 percent paid directly by the employee plus the 50 percent paid by the employer on the employee’s behalf. The employer’s half comes from wages the family would have earned had there not been a payroll tax.
 8. Taxable threshold levels for 1972 and 1997 adjusted by the index value for the Consumer Price Index—All Urban Series. See *Economic Report of the President* (Washington, D.C.: U.S. Government Printing Office, 1997), Table B-58, p. 365.
 9. Heritage Foundation estimates based on data from the Social Security Administration’s *1997 Annual Report of the Board of Trustees*, Table II.F14, p. 112.
 10. This is complicated by the decreasing number of firms that provide company pensions to their workers. Rising taxes of all kinds, costly regulations, and increasing pressures on the bottom line have led many firms away from the practice of providing pensions for long-time employees.
 11. Data on average family consumption expenditures from U.S. Department of Labor, Bureau of Labor Statistics, “Consumer Expenditures in 1995,” June 1997, Table A. This report estimates average family income before taxes to be \$36,918. Heritage analysts added \$2,289 to reflect additional wages the average worker would receive if the employer’s share of Social Security was converted to wages.

that poor communities will not have as much “home grown” capital with which to create new jobs and sources of income. Without these new jobs and income, members of the next generation will be less able to save for retirement than they could be. Thus, by taxing away one generation’s opportunity to help the next generation start earning at a higher level, the Social Security system acts as a drag on future generations.

Cumulative Effect on Communities. Although a low rate of return on rising Social Security taxes reduces the potential retirement savings of individual households, it is important to appreciate the cumulative effect this has on communities. In both rich and poor communities, less money accumulated in each household for retirement years means less money in the community not just for living expenses, but also for new businesses, for sending children to college, and generally for giving the next generation a more secure financial foundation. In short, each succeeding generation in a community is weakened financially by a poor rate of return from Social Security.

For a very rough picture of the cumulative impact on a community, consider a hypothetical small community of 200,000 residents. In this imaginary community, there are 50,000 families of four; all the parents are age 30; and both parents work, earning the average wage of \$26,000 (in 1997 dollars). Assume that nobody migrates into or out of this neighborhood. In this greatly simplified hypothetical community, the difference between the lifetime amount of savings the parents would accumulate by placing their Social Security tax dollars in conservative portfolios and the

amount actually obtained from Social Security would be approximately \$26 billion in 1997 dollars (based on family cases analyzed later in this study). This is the savings they must forego due to the failing Social Security tax system and, in effect, is money drained from their community during their working years.

To be sure, this example is completely fictitious, and actual calculations for real communities would vary widely. But this example serves to illustrate that the deficiencies of Social Security for individual households imply a significant impact on the long-run financial health of American communities.

SOCIAL SECURITY’S RATES OF RETURN FOR HOUSEHOLDS

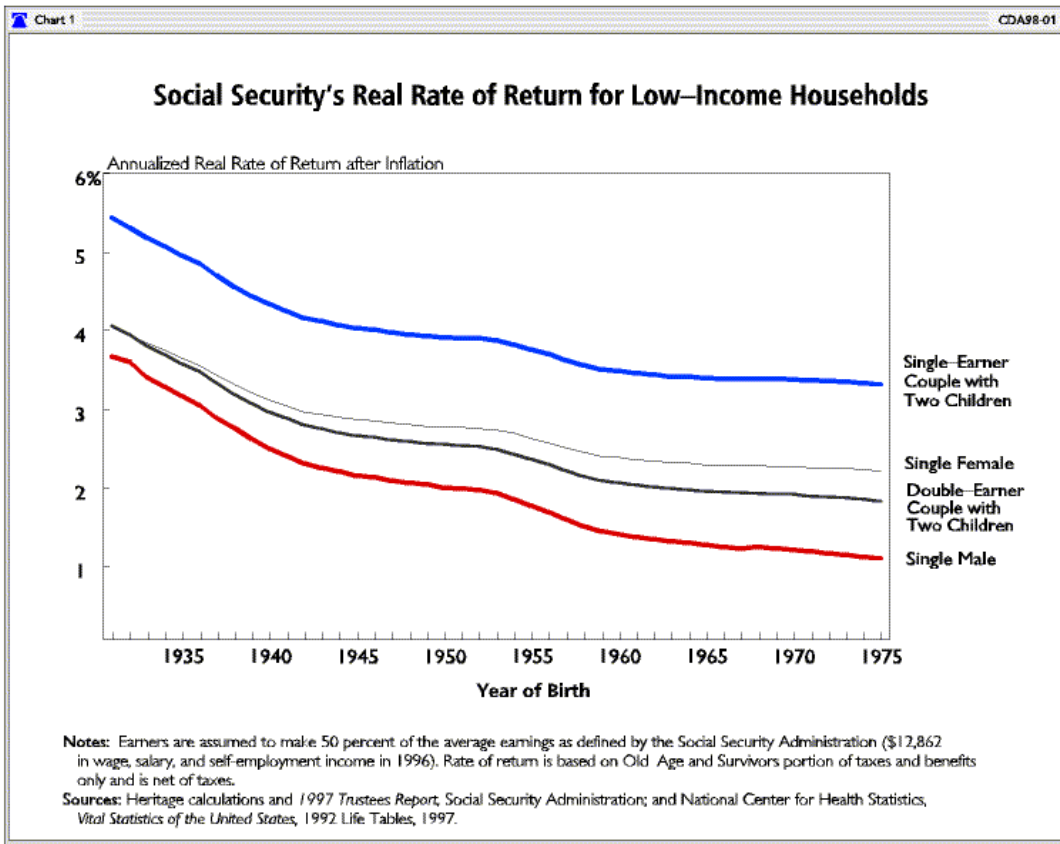
The authors calculated Social Security’s inflation-adjusted (or “real”) rates of return for various segments of the population and compared these returns with the rates of return workers could receive if they were allowed to invest their Social Security taxes in safe, private retirement investments.¹² These calculations show that families at all income levels receive dismal returns for the lifetime taxes they pay.

Defenders of Social Security often argue that Old-Age and Survivors benefits help low-income workers especially. But do they? Does Social Security give low-income Americans a decent return on all of the taxes they pay into the system over their lifetime of work?¹³

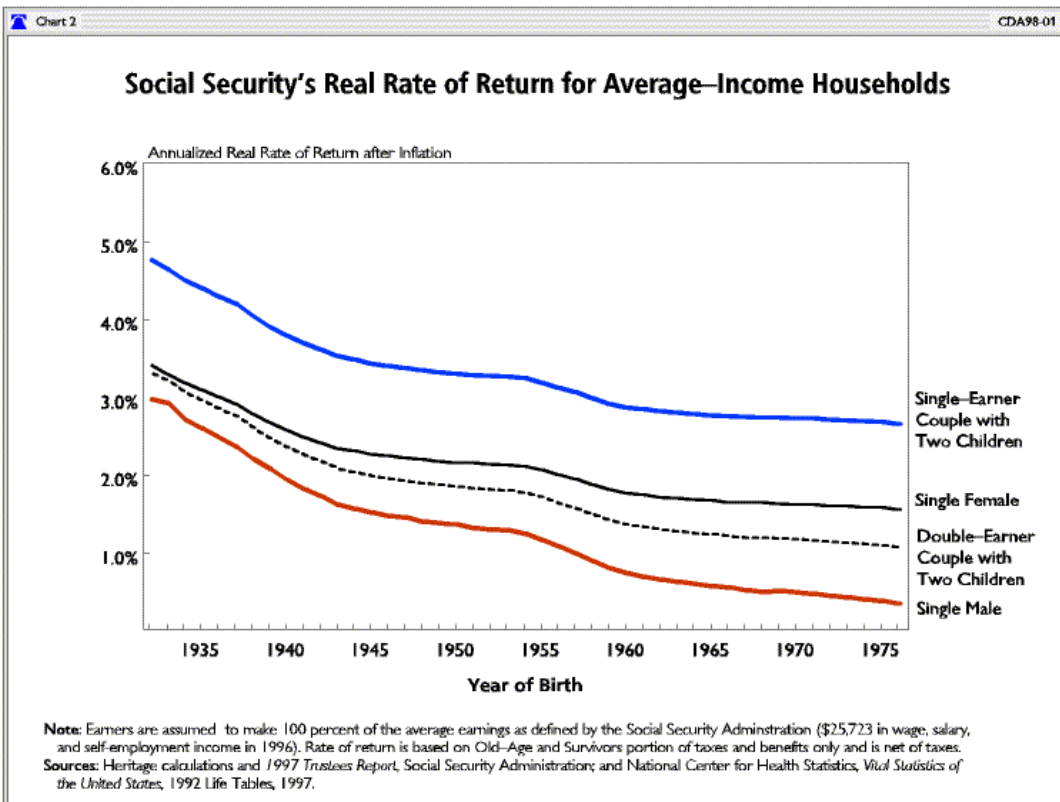
As Chart 1 indicates, a low-income family will likely receive at best a mediocre and at worst a

12. Heritage analysts reduced all rates of return and related calculations presented in this paper by the annual inflation rates for the years between 1997 and 2040, as forecast by the Board of Trustees of the Social Security Old-Age and Survivors Insurance Trust Fund in their 1997 annual report. This adjustment to rates of return, Social Security benefits, and privately managed savings means that the reader is always shown sums and earnings ratios in terms of a dollar’s purchasing power today. Thus, the statement “Social Security will pay out an annual amount of \$17,000 in the year 2040” means that the program will pay enough to allow a beneficiary to purchase then what \$17,000 will purchase now. In order for a beneficiary to have that much “purchasing power” in the year 2040, as he has today, Social Security will actually have to send this person around \$100,000 annually. The difference between the two amounts is explained by the effects of inflation on the dollar’s value, or by what a dollar will buy in 2040 after years of decreasing value due to inflation.

13. Generally speaking, a low-income earner is defined in Social Security Administration simulations as someone who earns 50 percent of the average wage. In 1996, a person defined as low-income earned approximately \$12,862 per annum.



very poor real rate of return from Social Security, despite the fact that Social Security's formulae are designed expressly to redistribute income toward workers with low income. Single-earner low-income couples born before 1935, who have paid much lower lifetime payroll taxes, fare better than do much younger workers. However, even the best-case rate of return (5.37 percent for a single-earner couple with children in which the worker was born in 1932) lies below 7 percent, a conservative estimate of what economists estimate to be the long-range real rate of return on equities.¹⁴ Every other low-income group lies below this rate of return, or well below the rates of return available to Americans who have opportunities to invest in stocks and bonds for the long term. Double-earner low-income families, as well as single low-income males and females, fare badly under Social Security. Low-income single males are hit particularly hard because of



14. Report of the 1994-1996 Advisory Council on Social Security, Vol. I: Findings and Recommendations, p. 35.

Social Security Rates of Return for African-Americans, Hispanic-Americans, and the General Population, by Date of Birth

Year of Birth	General Population			African-American			Hispanic-American		
	Single Male	Single Female	Double-Earner Family with Two Children	Single Male	Single Female	Double-Earner Family with Two Children	Single Male	Single Female	Double-Earner Family with Two Children
1950	Low Income			Low Income			Low Income		
	1.97%	2.71%	3.86%	0.99%	2.45%	3.47%	2.51%	3.10%	4.16%
	1.38%	2.33%	3.44%	-0.18%	1.94%	2.87%	2.00%	2.74%	3.78%
1960	Average Income			Average Income			Average Income		
	0.72%	1.75%	2.85%	0.29%	1.67%	2.70%	1.75%	2.39%	3.46%
	0.47%	1.60%	2.71%	-0.96%	1.14%	2.09%	1.20%	2.02%	3.06%
1970	High Income			High Income			High Income		
	-1.27%	0.14%	1.21%	-1.50%	0.98%	1.90%	0.96%	1.89%	2.93%
	0.39%	-0.12%	0.63%	1.07%	0.15%	0.15%	2.36%	1.57%	1.57%

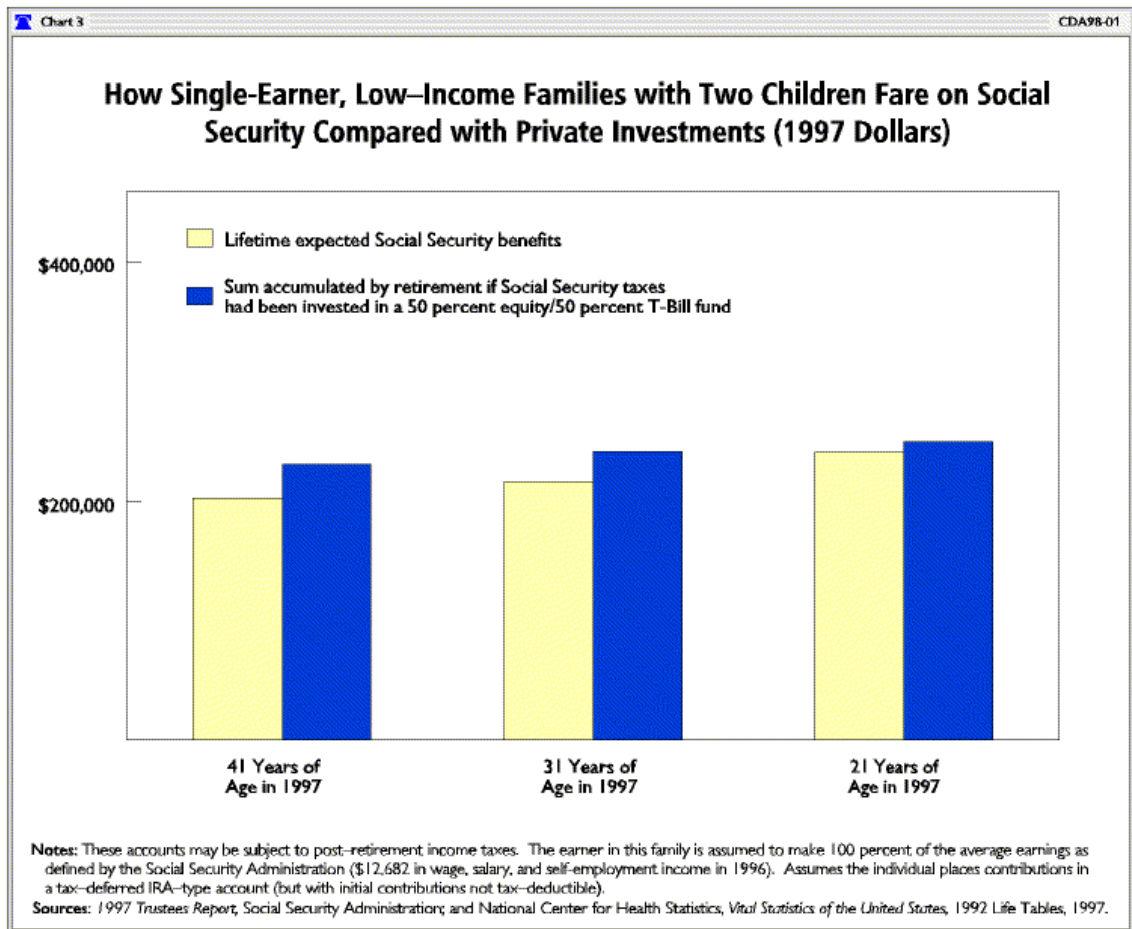
Note: The rates of return displayed in this table are preliminary estimates. They have been constructed using the methodology outlined in the Technical Appendix. In accordance with current statistical practices employed by the Social Security Administration's Office of the Actuary and by major research organizations, these rates of return have not been adjusted for life expectancy variations associated with income. If these complex adjustments were to be made, the rates of return for low-income workers would tend to decrease and those for high-income workers would tend to be higher.

Source: Heritage calculations, based on 1997 Trustees Report, Social Security Administration and National Center for Health Statistics, *Vital Statistics of the United States, 1992* Life Tables, 1997.

the lower male life expectancy and absence of spousal and survivor's benefits. The expected real rate of return from Social Security for low-income males falls from a high of 3.6 percent for those born in 1932 to 1.0 percent for those born in 1976—well below what could be realized from a prudent private investment portfolio.

Chart 2 shows rates of return for average-income families.¹⁵ All of the groups fare badly under Social Security relative to the return that they could receive from a conservative private investment portfolio. A married couple with two children and a single earner fare best, receiving 4.74 percent if the earner was born in 1932. This expected rate of return falls gradually to less than 2.6 percent for those born in 1976. As in the low-income scenario, single males fare worst of all. An average-earning single male born after 1966 can expect to receive an annualized real rate of return of less than 0.5 percent (less than one-half of 1 percent) on lifetime payroll taxes.

Table 1 shows selected Social Security rates of return for the general population, for African-Americans, and for Hispanic-Americans.



WHAT DO THESE RATES OF RETURN MEAN IN DOLLAR TERMS?

Due to the power of compound interest, even what appears to be a relatively small difference in the real rate of return can have significant implications for a family's lifetime accumulated wealth. In order to analyze the dollar implications of Social Security's lower rate of return, the authors calculated the inflation-adjusted differences between Social Security's benefits and what a fairly conservative investor could accumulate by retirement from a portfolio split equally between long-term U.S. Treasury bills and broad market equity funds.

A low-income single-earner couple with children whose wage earner is 41 years old in 1997 can expect to receive about \$202,000 in Social Security benefits in return for a lifetime of payroll taxes. Those 31 and 21 years old in 1997 can

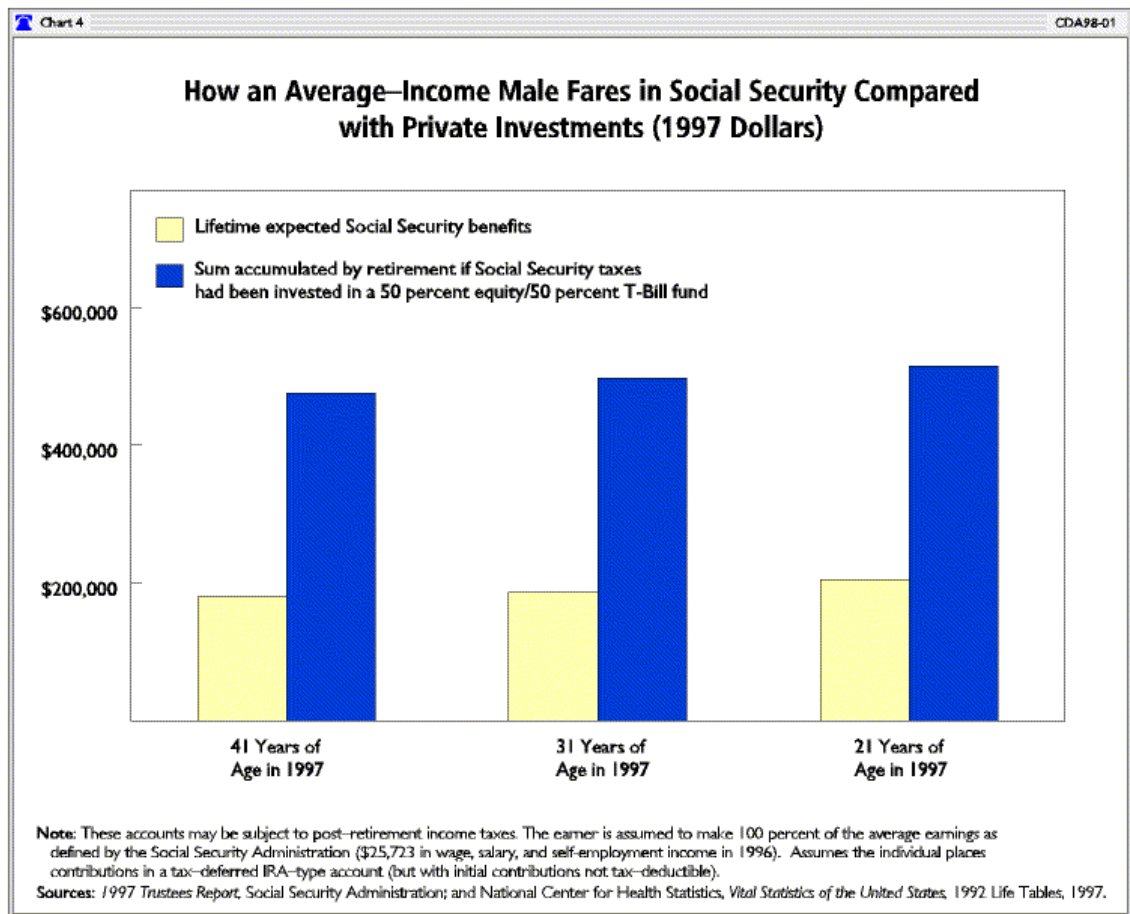
15. An average-income family is defined by the Social Security Administration as one in which the earners receive the average wage earned by all of those covered by Social Security. In 1996, earners in such families are estimated to have received \$25,723.

expect to receive around \$215,400 and \$240,200, respectively, in benefits. However, by investing these same tax dollars in a portfolio made up of 50 percent U.S. Treasury bills and 50 percent blue-chip equities, these three wage earners could accumulate by retirement

an estimated \$230,200, \$241,000, and \$249,000 in 1997 dollars, respectively.¹⁶

Hence, staying in the Social Security program means that low-income married couples will bear a cost of about \$28,200, \$25,600, and \$8,800 for wage earners who were born in 1956, 1966, and 1976, even though this group has the highest rate of return from Social Security. Indeed, these amounts are likely to underestimate the gain from a private retirement plan, since they do not include any of the interest a couple can expect to earn on the accumulated sum in the period after retirement.

Social Security poses even greater costs for groups with lower rates of return than low-income single-earner couples. A single male earning what the Social Security Trustees call “an average income” (or \$25,723 in 1996) is particularly hard-hit by Social Security’s low returns. A 21-year-old

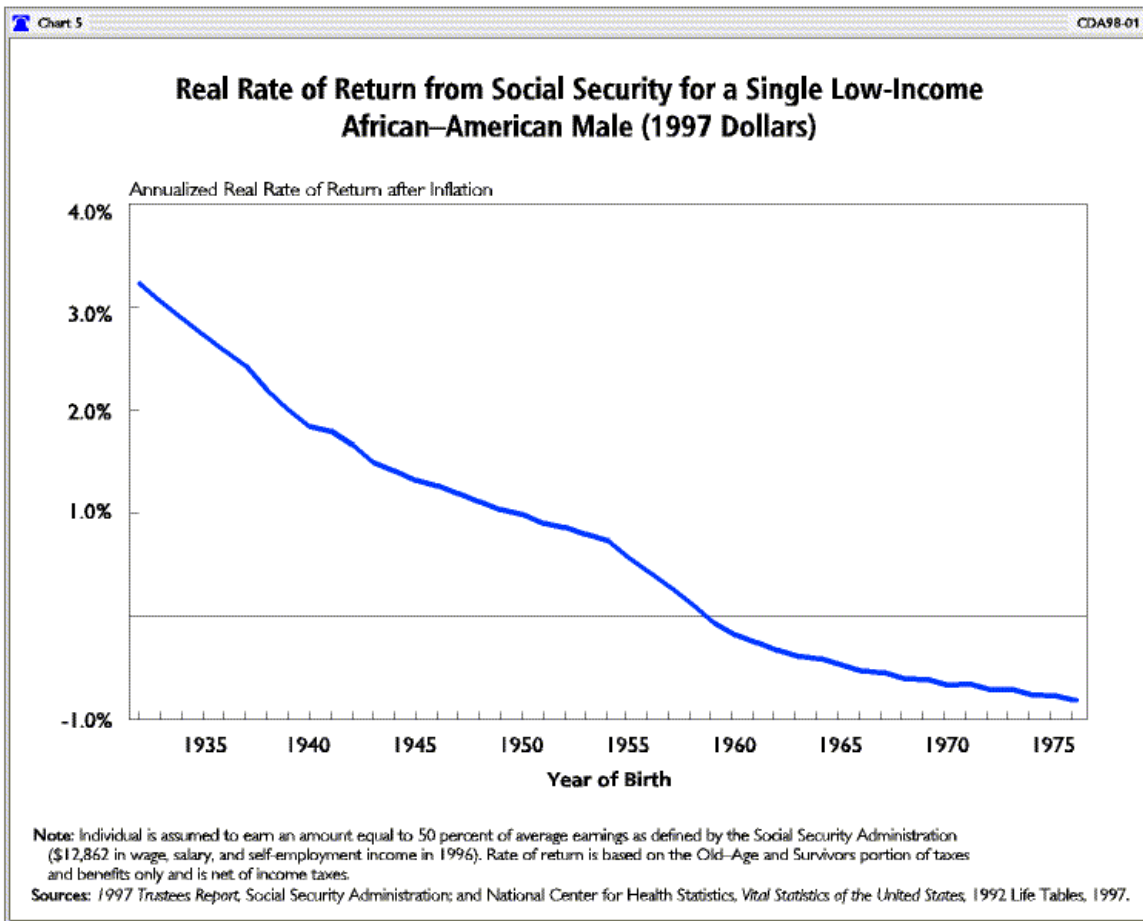


single male making an average income throughout his lifetime can expect to lose \$309,400 in potential retirement income by staying in Social Security when compared with what he would earn if he invested his payroll taxes in a safe, conservative private retirement fund made up of 50 percent equities and 50 percent government bonds. A 31-year-old single male who earns what the Social Security Trustees call an average income will lose \$311,000 over the income a conservative private portfolio would likely yield, while a similar 41-year-old will forego \$296,000 (in 1997 dollars).

SOCIAL SECURITY AND AFRICAN-AMERICANS

Due to generally lower life expectancies, African-Americans experience particularly poor rates of return from Social Security. This means, among other things, that Social Security taxes impede the

16. These amounts reflect the buildup of retirement savings in tax-deferred IRA-type investment portfolios and are prior to the payment of any applicable income taxes.



An African-American, low-income single male born in 1932 and retiring today can expect a rate of return of approximately 3.23 percent on his lifetime contributions. However, this rate of return falls for younger African-American males. Indeed, the expected rate

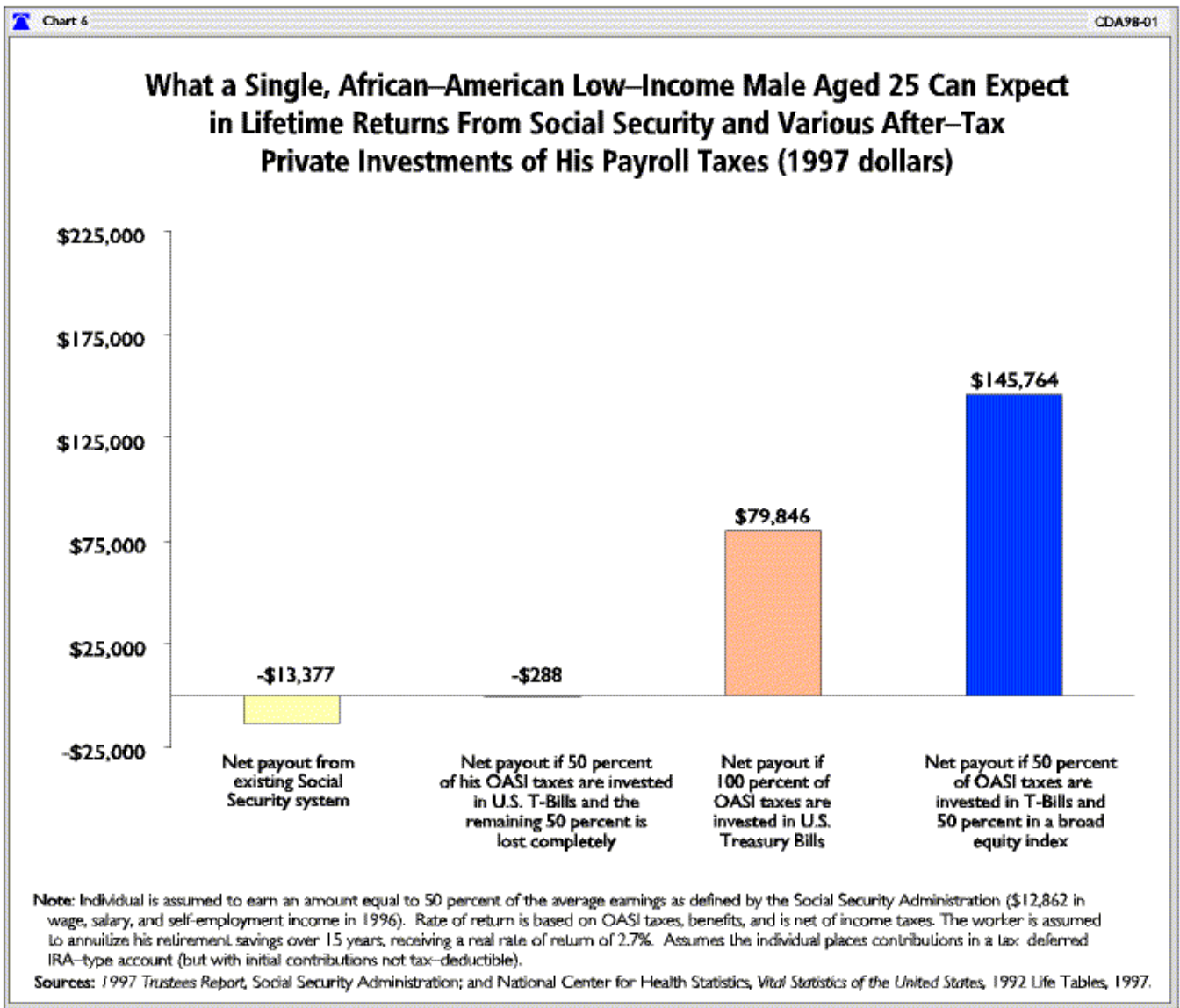
intergenerational accumulation of capital among African-Americans, a group which has found it difficult to acquire capital. In fact, even under the most optimistic assumptions, Social Security taxes actually shrink the lifetime net earnings of some of the least advantaged members of the community.

Despite efforts to transfer resources toward low-income individuals through Social Security, low-income African-American males realize particularly dismal rates of return from Social Security, even under the most favorable assumptions. Chart 5 shows the real rate of return from Social Security for African-American males who earn what the Social Security Trustees call “low-income” annual earnings throughout their life—about \$12,862 in 1996. Chart 5 also illustrates how the best intentions of Social Security’s defenders to help low-income minorities are frustrated by the program’s dismal rates of return.¹⁷

of return from Social Security for those born after 1959 is negative. This means that a typical, low-income African-American male 38 years old or younger can expect to pay more into the Social Security system than he will likely receive after inflation and federal income taxes. Put another way, this person’s lifetime purchasing power, or the ability to buy the same goods and services in retirement that he buys today, actually shrinks as a result of his participation in the Social Security program.

To gauge how much of his purchasing power this future retiree may forego by staying in Social Security, the authors calculated the amount of money that a 25-year-old, low-income African-American male could accumulate by retirement if he invested his payroll taxes privately. This inflation-adjusted sum was compared with the amount

17. Indeed, life expectancy for this African-American male is likely to be lower than the one used. Life expectancy is closely related to earnings, and while the average African-American male worker in the last quarter of 1996 had earnings of 82.8 percent of the national average, the above worker has only earnings of 50 percent of the average. See footnote 11, *supra*.



he can expect to receive from Social Security, all in 1997 dollars.

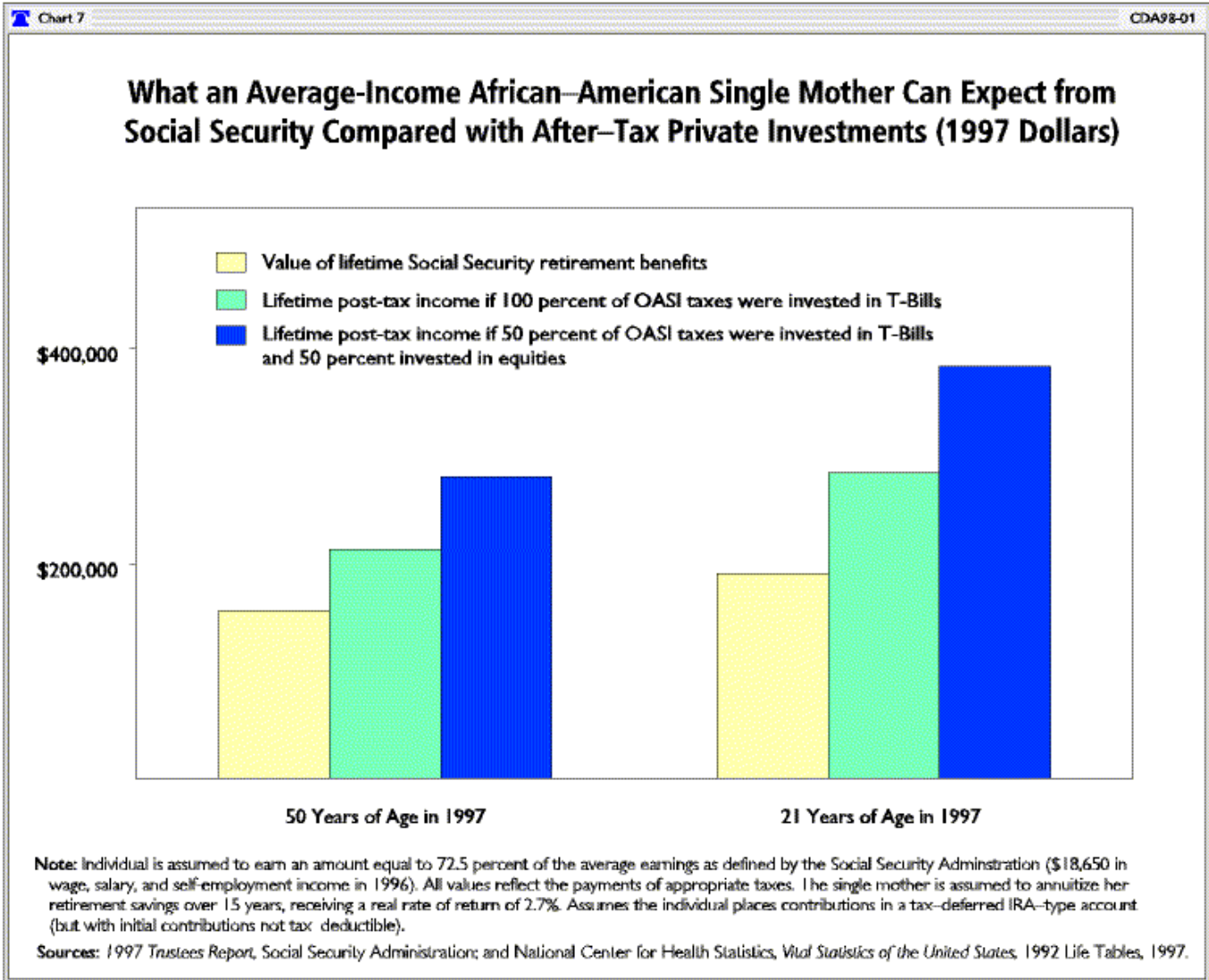
Three scenarios for alternative rates of return are presented in Chart 6. They examine the after-federal-income tax benefits, assuming the contributions were placed in a tax-deferred IRA-type account.¹⁸ The first scenario assumes that the worker invests 50 percent of his taxes in U.S. Treasury bills and 50 percent in a broad equity index. The second scenario assumes that all payroll taxes are invested entirely in T-bills. The third scenario assumes the worst case: that the worker invests 50

percent in U.S. Treasury bills and loses all of the remaining half in bad investments.

As Chart 6 shows, the current Social Security system can be expected to shrink this individual's net lifetime income by \$13,377 in terms of 1997 dollars. He is likely to fare better, even if he were to lose half of his invested tax dollars completely, by an amount of \$13,089, compared with Social Security's rate of return.

Moving beyond the extreme worst-case outcome, the results are even more striking. Under

18. The amounts below assume that the worker pays out the amount he has accumulated in an annuity over his lifetime and receives an interest rate of 2.7 percent. The current federal income tax rates (with current rate structure, exemptions, tax bands, and deductions adjusted by inflation as mandated in current legislation) are applied against this annuity income.

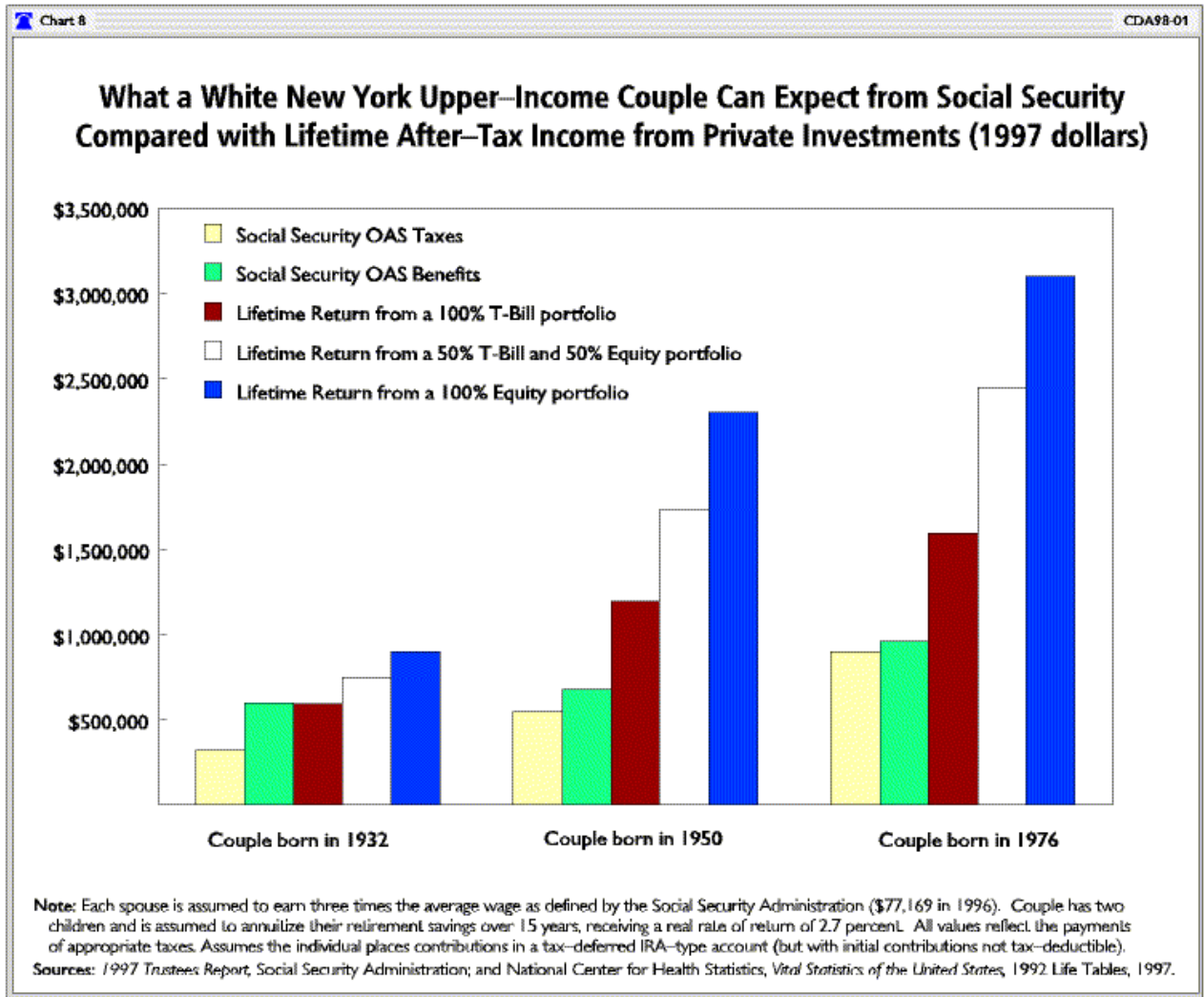


conservative assumptions, a 100 percent T-bill portfolio will result in an increase in a lifetime income net of taxes of \$79,846, while a 50 percent bond/50 percent equity portfolio will likely result in a net increase in post-tax lifetime income of \$145,764.

The nature of the current Social Security system also imposes a heavy burden on single-parent families. Chart 7 illustrates some of the total lifetime costs experienced by two typical African-American single mothers of different ages but each earning an annual salary of \$18,650 in 1996. The expected total Social Security benefits are presented in the chart, as well as the amount that each woman would have accumulated by retirement had she been able to invest her Social Security taxes under two sets of assumptions: (1) an “ultra-conservative” portfolio in which all of her taxes were

invested in U.S. Treasury bills, and (2) a portfolio in which 50 percent was invested in Treasury bills and 50 percent in a broad equity fund.

In return for a lifetime of contributions to Old-Age and Survivors Insurance, the 50-year-old single mother can expect to receive, on average, \$155,903 in Social Security benefits while a 21-year-old can expect to receive \$190,767. In each case, private strategies yield much higher returns than Social Security. An ultra-conservative investment program in which all of their savings are invested in long-term government bonds would yield post-tax lifetime amounts of \$213,220 and \$284,098 for the 50-year-old and 21-year-old,



respectively—a net gain over Social Security of \$57,317 and \$93,330.¹⁹

The gains from a prudently mixed portfolio of bonds and equities are even greater. Had their taxes been invested in a mixed portfolio of 50 percent bonds and 50 percent equities, the 50-year-old would receive at least \$280,016 in lifetime post-tax income and the 21-year-old would receive \$382,840 (in 1997 dollars). This represents, respectively, \$124,113 and \$192,073 more than they could expect to receive from Social Security.

SOCIAL SECURITY AND UPPER-MIDDLE-INCOME AMERICANS

Even for affluent groups, with their ability to supplement Social Security, the lifetime cost of the current Social Security system is by no means trivial in terms of economic well-being. Chart 8 shows the effects on the lifetime wealth and savings of an upper-middle-income, white married couple in New York who have two children and who, in 1996, each earned \$77,166 (for a combined income of \$154,332).

For such couples, the lifetime inflation-adjusted Social Security tax burden will increase from \$323,500 for those born in 1932 to just over \$902,050 for those born in 1976. By contrast, this couple would likely gain enormously from private

19. The current federal income tax rates (with current rate structure, exemptions, tax bands, and deductions adjusted by inflation as mandated in current legislation) are applied against this annuity income.

investment of their tax dollars. For couples born in 1932, 1950, and 1976, investing their tax dollars in a broad market equity fund would generate \$900,426, \$2,304,370, and \$3,104,259, respectively, in after-tax lifetime 1997 dollars.²⁰ This can be compared with their respective expected total lifetime Social Security benefits of \$602,776, 682,372, and \$956,959.²¹

The economic costs of the current system become even clearer when lost capital accumulation and income opportunities are assessed. Not only does Social Security reduce the income and the ability of these New York couples to save, but their reduced savings translate into less capital for expanding businesses, fewer jobs for others, and, ultimately, a lower standard of living for the entire community.

Why would economic activity be lower if Social Security taxes come back to the community in the form of Social Security benefits? Most economists agree that savings and investment contribute more to economic growth than personal consumption spending. Newer and better machines make workers more productive than longer vacations and a new pair of exercise shoes. Even new savings invested in government bonds cause interest rates to fall and increase private investment. However, under the current pay-as-you-go system, Social Security taxes are consumed primarily in paying benefits to current retirees who spend nearly all of their income on personal consumption items. In a privatized system, these funds would be transformed into investments, adding to the capital stock of the nation and enhancing productivity and economic growth.

If the upper-middle-income couple born in 1950 had been allowed to invest their tax dollars

in U.S. Treasury bills, they would have accumulated \$1.22 million in 1997 dollars by the date of retirement.²² A portfolio composed entirely of high-grade stocks would have created \$2.58 million in new private capital by retirement. For a high-income couple born in 1972 (25 years old today), the investment of their Social Security taxes in private equities would have created \$3.65 million in new capital by the date of retirement. By contrast, other than the relatively small surplus that is invested in the trust funds, the current pay-as-you-go Social Security system creates no new savings or capital.²³

CONCLUSION

When the Social Security system began, its aim was to help ordinary Americans and those in disadvantaged positions to have adequate financial security in their retirement years. However, as this analysis has shown, the current Social Security system may actually decrease the lifetime well-being of many socioeconomic groups, even under the most favorable assumptions. Among the groups who will lose out under the current system are single mothers, low-income single males, average-income married couples with children, and even affluent professionals. Indeed, many ordinary Americans already understand that the Social Security system is a bad deal. Recent surveys have shown that many workers expect to pay more, in real terms, into the system than they ever expect to receive in retirement benefits.²⁴

This analysis of the Social Security system almost certainly underestimates its total economic costs. It makes no attempt, for instance, to include the benefits from faster economic growth, higher wages, and increased employment generated by a

20. The current federal income tax rates (with current rate structure, exemptions, tax bands, and deductions adjusted by inflation as mandated in current legislation) are applied against this annuity income.

21. In line with upper-bound estimates of the effects of higher income on life expectancy, the remaining life expectancy of this couple is increased by 10.2 percent for the male and 8.2 percent for the female. See footnote 28, *infra*.

22. These amounts differ from the amount a lifetime income investment of their savings will generate because they do not include interest on these amounts following retirement or the income taxes paid on them when they are drawn down by the retired couple.

23. In 1996, a little under 14.5 percent of all OASDI tax and interest receipts was added to the OASDI trust funds. See Social Security Trustees Report, Table II, C1.

24. See Michael Tanner, "Public Opinion and Social Security Privatization," Cato Project on Social Security Privatization S.S.P. No. 5, August 6, 1996.

retirement program in which individuals are allowed to invest their Social Security tax dollars and build the wealth necessary to sustain them in their old age.

Although the debate on Social Security reform at times may focus on technical terms (such as the “replacement ratio” and the trust fund’s “long-range actuarial balance”) which mean little or nothing to ordinary American families, there is little doubt that the outcome of the debate will be profoundly important to them. For example, whether or not the current system will continue to exist—perhaps sustained by benefit cuts and tax increases—is a matter of great concern to the 21-year-old African-American single mother described earlier. Under a system where she could invest her own tax dollars, this woman perhaps could accumulate enough to buy an annuity upon retirement that would pay about \$28,800 a year after taxes,²⁵ almost twice what she would receive from Social Security, or an annuity equal to her

Social Security retirement benefits and pass on the remainder, around \$200,000, to her children.

But this debate is also a concern to the thirty-something married couple who earned a combined income of \$52,000 in 1996 and struggle to put away enough for retirement while paying over one-eighth of their income into a Social Security system that is likely to yield a real return of less than 1.7 percent on their contributions. Moreover, it will influence the life of people, perhaps not yet born, who quite possibly could become employed by a business that is created by the retirement investment of the young high-income New York couple.

For almost every type of worker and family, retirement under Social Security means receiving fewer dollars in old age and passing on less wealth to the next generation than they could if allowed to place their current Social Security tax dollars in private retirement investments.

25. Based on an interest rate of 2.7 percent and a lifetime expectancy of 15 years.

APPENDIX

BASIC ASSUMPTIONS AND METHODOLOGY

The authors used The Heritage Foundation's Social Security Rate of Return Microsimulation Model to compare the benefits different types of families can expect to receive from the Old-Age and Survivors Insurance (OASI) with the Social Security taxes they pay during their working lives.

The Heritage model treats taxes paid over a worker's lifetime as a series of investments. Social Security's rate of return is the rate of return on payroll taxes that would buy an annuity equal in value to the Social Security benefits payments. This yield is the difference between Old-Age and Survivors benefits payments (after subtracting any applicable income taxes) and the amounts paid to the Old-Age and Survivors Insurance trust fund through payroll taxes. Throughout the model and this paper, all amounts are adjusted for inflation and expressed in terms of 1997 purchasing power.

The Heritage Foundation model includes both portions of Old-Age and Survivors Insurance taxes: the share paid by employers and the share paid directly by the employee. However, in calculating the return, an amount is removed from taxes paid that is equal to the premium on a term life insurance policy which has the same value as benefits that are paid to children of workers (and the spouse caring for their children) who die before retirement. This means the calculations do not unfairly include the cost of the spousal benefit when figuring the rate of return in terms of retirement income. Heritage analysts also assume that, from 2015, tax rates will increase by the amount that the Board of Trustees of the Social Security Administration consider to be necessary to finance the Old-Age and Survivors Insurance benefits contained in current law.

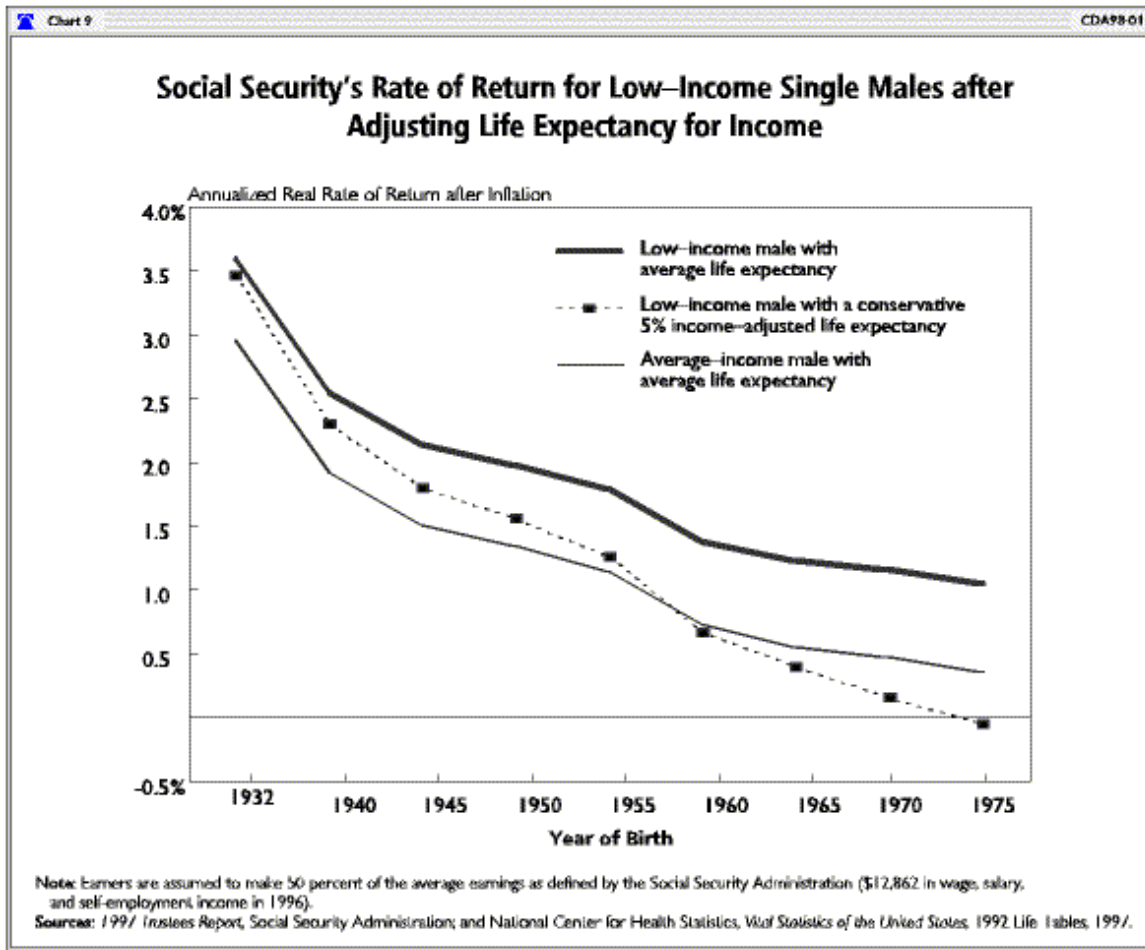
The earnings to which OASI tax rates are applied are based on a proportion of the Social Security Administration's Average Wage Index. Average-income workers are assumed to earn 100 percent of this wage, and low-income workers are assumed to earn 50 percent of this wage. Past values of this wage are taken from historical data contained in the Board of Trustees' 1997 Annual Report, and future wage growth is based on the Trustees' best guess of what the rate of increase in the average wage will be. All workers are assumed to begin work on their 21st birthday and to continue to work right up to the age on which they become entitled to Social Security's full Old-Age and Survivors benefit. For those retiring in 1997, this is age 65; but under current law, this retirement age is scheduled to increase gradually until reaching 67 for those born in 1960 and later.

The model calculates post-retirement Old-Age and Survivors benefits to individuals according to formulae stipulated in current law and the "best guess" economic assumptions contained in the 1997 Annual Report of the Board of Trustees, up to the date on which their life expectancy expires. Neither Disability Insurance taxes nor benefits are included in the model.

The model uses life expectancies drawn from the National Center for Health Statistics' 1992 Life Tables for the United States.²⁶ Heritage analysts adjusted these life tables for future changes in life expectancy, using the mid-range projections of the 1997 Trustees Report. For African-Americans, a "convergence factor" is included that assumes, in line with U.S. Census Bureau projections, that African-American life expectancy converges with that of the general U.S. population by 2070.²⁷ Income itself plays a role in influencing life expectancy: For example, access to health care and nutrition improves as income rises. Heritage analysts incorporated this influence by increasing the life

26. National Center for Health Statistics, *Vital Statistics of the United States, 1992 Life Tables*, Vol. II, Section 6, 1997.

27. This estimate has been criticized as too optimistic. Analysts have pointed out that life expectancy data since the late 1980s have shown little evidence of racial convergence. Indeed, some claim that the gap is widening. See Paul E. Zopf, Jr., *Mortality Patterns and Trends in the United States* (Westport, Conn.: Greenwood Press, 1992).



if the most conservative assumption (5.6 percent) is used to adjust the life expectancy of a low-income single male, the result would be a substantial reduction in his rate of return from Social Security.²⁹

Throughout this study, comparisons are made between what families

could accumulate during their working lives if they were able to invest their Social Security Old-Age and Survivors taxes (less the life insurance premium equal to the value of pre-retirement Survivors Insurance benefits) and what they can expect to receive, on average, in Old-Age and Survivors benefits. Different assumptions are entertained regarding the composition of the worker's portfolio of private investments. For years prior to 1997, the historical inflation-adjusted rates of return on long-term U.S. Treasury bills³⁰ and U.S. equities³¹ are used to determine, respectively, the rate of return on bonds and the rate of return on

expectancy of both spouses in line with scientific evidence for workers who earned more than the average wage. However, they did not decrease life expectancy for workers who earned less than the average wage. The possible effect of decreased life expectancy due to poverty on the rates of return experienced by low-income individuals can be seen in Chart 9.

28. For an analysis of the effects of income on life expectancy, see E. Rogot, P. Sorlie, and N. Johnson, "Life Expectancy by Employment Status, Income, and Education in the National Longitudinal Mortality Study," *Public Health Reports* 107CH, July–August 1992, pp. 457–461, and J. Duggan, R. Gillingham, and J. Greenless, "The Returns Paid to Early Social Security Cohorts," U.S. Treasury Department, Office of the Assistant Secretary for Economic Policy, 1993.

29. As well as an undermining of the "progressivity" of the current system.

30. Based on the real rate of return for long-term U.S. Treasury bills. The Federal Reserve Board's 10- to 15-year Treasury Bond Index is used from 1950 to 1975; the 20-year Treasury Bond is used in 1976. From 1977 on, the 30-year bond is used.

31. Based on the real rate of return for the Standard and Poors' 500 Equity Index.

equities. For the period 1997 onwards, Heritage analysts used forecasts of the real rates of return on 30-year long-term U.S. Treasury bonds to estimate returns on bond investments. These forecasts were made by WEFA, Inc., an economics consulting firm, and published in its Long-Term Macroeconomic Forecast for October 1997.³² The eventual long-run average of these forecasts is a 2.8 percent real rate of return. The annualized real rate of return on equities is assumed to be 5.7 percent, which lies at the lower boundary of professional estimates of the long-run returns to equities.³³

THE HERITAGE FOUNDATION SOCIAL SECURITY RATE OF RETURN MICROSIMULATION MODEL

The Heritage Foundation Social Security Rate of Return Microsimulation Model computes the expected annualized rate of return from Social Security on the basis of the taxes that individuals or couples are projected to pay and the benefits they can expect to receive during their lifetime. The focus of the model is not to provide estimates of the “average” rates of return to existing populations, but rather to use data to construct representative individual and family types and to estimate the rates of return that those representative types can expect to receive.

Internal Rate of Return

The internal rate of return is defined as the rate which will set the expected discounted value of the stream of Social Security Old-Age and Survivors Insurance tax payments (i.e., taxes $[T_i]$) equal to the expected discounted stream of income from the system (i.e., benefits $[B_i]$).

Discount Rate:

r is the discount rate such that:

$$\sum_{t=1}^i \frac{E(T_i)}{(1+r)^i} = \sum_{t=1}^i \frac{E(B_i)}{(1+r)^i}$$

Taxes:

The taxes paid by an individual are calculated by multiplying the individual’s taxable earnings and self-employment income in a given year by the Old-Age and Survivors Insurance (OASI) tax rate in that year. Each individual is assumed to begin work on his or her 21st birthday and to cease working on the date on which he or she is entitled by law to collect the full Social Security Old-Age benefit. The OASI tax rate is taken from current law until the year 2015, after which tax rates are adjusted annually so that income and expenditures of the Old-Age and Survivors Insurance program are equal.³⁴

The tax revenue in a given year is calculated by means of multiplying the earnings for that person by the OASI tax rate

$$T_i = x_i * W_i - L_i$$

where x is the OASI tax rate for year i , W_i is the total taxable wage, salary, and self-employment income for year i ; and L_i is an amount equivalent to the value of a life insurance premium equal to the actuarial value of pre-retirement Survivors Insurance coverage.

Earnings

The individual’s annual earnings are assumed to be a fixed proportion of Social Security’s “Average

32. WEFA, Inc., formerly known as Wharton Econometric Forecasting Associates, is an internationally recognized economics consulting firm. *Fortune* 500 companies and prominent government agencies use WEFA’s forecasts and consulting products.

33. The 1994–1996 Social Security Advisory Committee, for example, found that a long-run real rate of return on equities of 7 percent existed. *Report of the 1994–1996 Advisory Council on Social Security, Vol. I: Findings and Recommendations*, p. 35.

34. These tax rates are calculated using the intermediate assumptions in the *1997 Annual Report of the Board of Trustees of the Federal Old-Age and Survivors Insurance and Disability Insurance Trust Fund*.

Wage Index”³⁵ for employed and self-employed workers.

“Average-income” individuals are assumed to earn 100 percent of the average wage index during their lifetime; “low-income” individuals are assumed to earn 50 percent of the population’s average wage; and “high-income” individuals are assumed to earn 300 percent of the average wage. In 1996, the value of these amounts was estimated to be, respectively, \$12,862, \$25,723, and \$77,169.³⁶

For periods subsequent to 1996, the average wage index is assumed to grow at the rate assumed under the “intermediate” projections made by the Social Security Board of Trustees in their 1997 Annual Report.³⁷ In the case of the “Single-Earner Married Couple” scenario, it is assumed that one spouse pays no OASI taxes during his or her lifetime. In the case of the “Double-Earner Married” couple scenario, each earner is assumed to pay OASI taxes.

Post-Retirement Old-Age and Survivors Benefits

OASI benefits are calculated on the basis of the “bend point” formulae—the earnings levels from which benefit amounts are calculated—as specified under current law. For example, in order to calculate the monthly benefit amount for an individual who first becomes eligible for full Social Security Old-Age Benefits in 1995, the individual’s Average Indexed Monthly Earnings (AIME) is calculated according to the formulae contained in current law. Individuals receiving benefits for the first time in 1997 are paid 90 percent of their AIME up to the \$437 bend point, 32 percent of any earnings between the \$437 and \$2,635 bend points, and 15 percent of any amount in excess of \$2,635 (up to the maximum amount of earnings

which are taxable). For years after 1997, these bend points are indexed at rates in the “intermediate” range projections made in the 1997 Trustee’s Report.

Benefits are paid up to the point of the individual’s life expectancy. These tables are adjusted to fully incorporate the effect of changes in life expectancy that are estimated by the Trustees of the Social Security Trust Funds to occur over the period 1993–2070.

Survivors Insurance

For married couples, the value of pre-retirement Survivors Insurance—paid to children of deceased covered workers and the spouse taking care of them—is approximated by subtracting from taxes (T_i) the premium required to buy an equivalent term life insurance policy. Covered individuals are assumed to carry two 10-year term life insurance policies over 20 years between the ages of 35 and 55. For each covered worker turning 35 in 1997 who has two children and earns an average wage, the Survivors Insurance policy is estimated to be equivalent to a 10-year term life insurance policy worth \$295,000. For each average-wage covered worker with two children who turns 45 in 1997, the Survivors Insurance policy is assumed to be equivalent to a 10-year term life insurance policy worth \$194,700. The market insurance annual premiums required to buy every \$250,000 worth of insurance (in 1997) were estimated, respectively, to be \$167 and \$345 for a male and \$150 and \$230 for a female.³⁸ The estimates of the life insurance component are indexed to changes in the earner’s Primary Insurance Amount,³⁹ which is used to calculate the worker’s retirement benefit.

In the case of the single-earner married couple, each spouse is assumed to be the same age. After retirement, the couple is paid 150 percent of the

35. As defined in the *1997 Annual Report of the Board of Trustees of the Federal Old-Age and Survivors Insurance and Disability Insurance Trust Fund*, p. 208.

36. *Ibid.*, Table II.E.2.

37. *Ibid.*

38. Based on lowest quotes available for contract from Budgetlife’s World Wide Web page, www.budgetlife.com, on September 24, 1997.

39. As defined in the *Annual Report of the Board of Trustees of the Federal Old-Age and Survivors Insurance and Disability Insurance Trust Fund*, p. 216.

benefit amount payable to a single beneficiary during the lifetime of the husband. During the period between the death of the husband and the death of the wife, the wife is paid 100 percent of the benefit amount payable to a single recipient.⁴⁰

Life Expectancy

Life expectancy by worker's age in 1992 is estimated based on data contained in the National Center for Health Statistics' 1992 Life Tables.⁴¹ However these estimates reflect only the demographic conditions that prevailed in 1992 and do not reflect the long-term secular upwards trend in life expectancy that improved health care and better nutritional standards will cause.

The Board of Trustees of the Social Security Trust Fund, for example, estimates that between 1997 and 2070 life expectancy at birth will increase by 5.8 years for males and 4.6 years for females, and that life expectancy at age 65 will increase by 3 years for females and 2.9 years for males.⁴² In order to create life expectancy projections that embody these projected trends, it is necessary to adjust the 1992 Life Tables.

First, Heritage analysts made a slight adjustment in the 1992 Life Tables by applying to them an age-weighted index that adjusts for the estimated increase in life expectancy over 1992-1997:

$$Q = E+J, \text{ and}$$

$$J = ((O/65)*S + ((65-O)/65)*X)$$

where

- Q = 1997 "adjusted" static life expectancy;
- J = age-weighted increase in life expectancy age between 1992 and 1997;
- E = life expectancy based on 1992 "static life tables";
- O = age in 1992 (ranges from 16 to 60); and
- S and X = respectively, the increase in life expectancy at birth and age 65 over 1992-1997.

Second, Heritage analysts recognized that the gains in life expectancy in the post-1997 period

will not be uniform across the age distribution. The Social Security Administration estimates that life expectancy at birth will increase much faster than life expectancy at age 65. In order to calculate the gain in life expectancy for individuals between these two points (birth and 65), an age-weighted index is used:

$$G = (A/73)*B + ((65-A)/73)*x'$$

where

- G = overall gain in life expectancy for a particular age group over 1992-2070;
- A = age in 1997 (ranges in model from 21 to 65);
- B = gain in life expectancy at birth between 1997 and 2070; and
- x' = gain in life expectancy at age 65 between 1997 and 2070.

G can be used to construct a projected life table for the single year 2070, where L is life expectancy for each age group in 1997 and G is the gain in life expectancy expected to occur for that particular age between 1997 and 2070:

$$L = Q + G.$$

However, this projection must also take into account the fact that life expectancy gains will be distributed over time as well as across the age distribution. The gains in life expectancy projected to occur will be spread across a period between now and 2070. The later a cohort is born, the greater the proportion of this increased longevity will be from where the cohorts can be assumed to benefit. In order to estimate the degree to which a given cohort will benefit from this increase in life expectancy, the following linear weighting equations were used:

$$\text{"Dynamic" Life Expectancy} = Y + R*(G)$$

where

- Y = Q, or life expectancy in 1997;
- R = ((2070-V)/73); and where
- V = year in which the individual's life expectancy expires.

40. All life expectancy data used in this paper show that women have longer life expectancies than men.

41. National Center for Health Statistics, *Vital Statistics of the United States, 1992 Life Tables*, Vol. II, Section 6, 1997.

42. *Ibid.*

For African-Americans, Heritage analysts added a convergence factor. It is assumed in the model, in accordance with U.S. Census Bureau⁴³ projections, that African-American life expectancy at birth converges with white life expectancy at birth between 1989 and 2070. This assumption is incorporated by assuming that the gap between African-American and white life expectancy closes by a fixed fraction each year between 1989 and 2080. This convergence factor is assumed to

increase with the year in which an individual is born. The gap between African-American and general population life expectancy at birth is assumed to diminish by a factor of 1/154th (or 0.6494 percent) for each birth year between 1927 and 2080. Hence, for each African-American born in 1932, the current gap between life expectancy and general life expectancy is assumed to diminish by 3.25 percent; and for an African-American born in 2080, it is assumed to diminish by 100 percent.

43. Zopf, *Mortality Patterns*, *op. cit.*