



## **Basic Facts on Social Security and Proposed Benefit Cuts/Privatization**

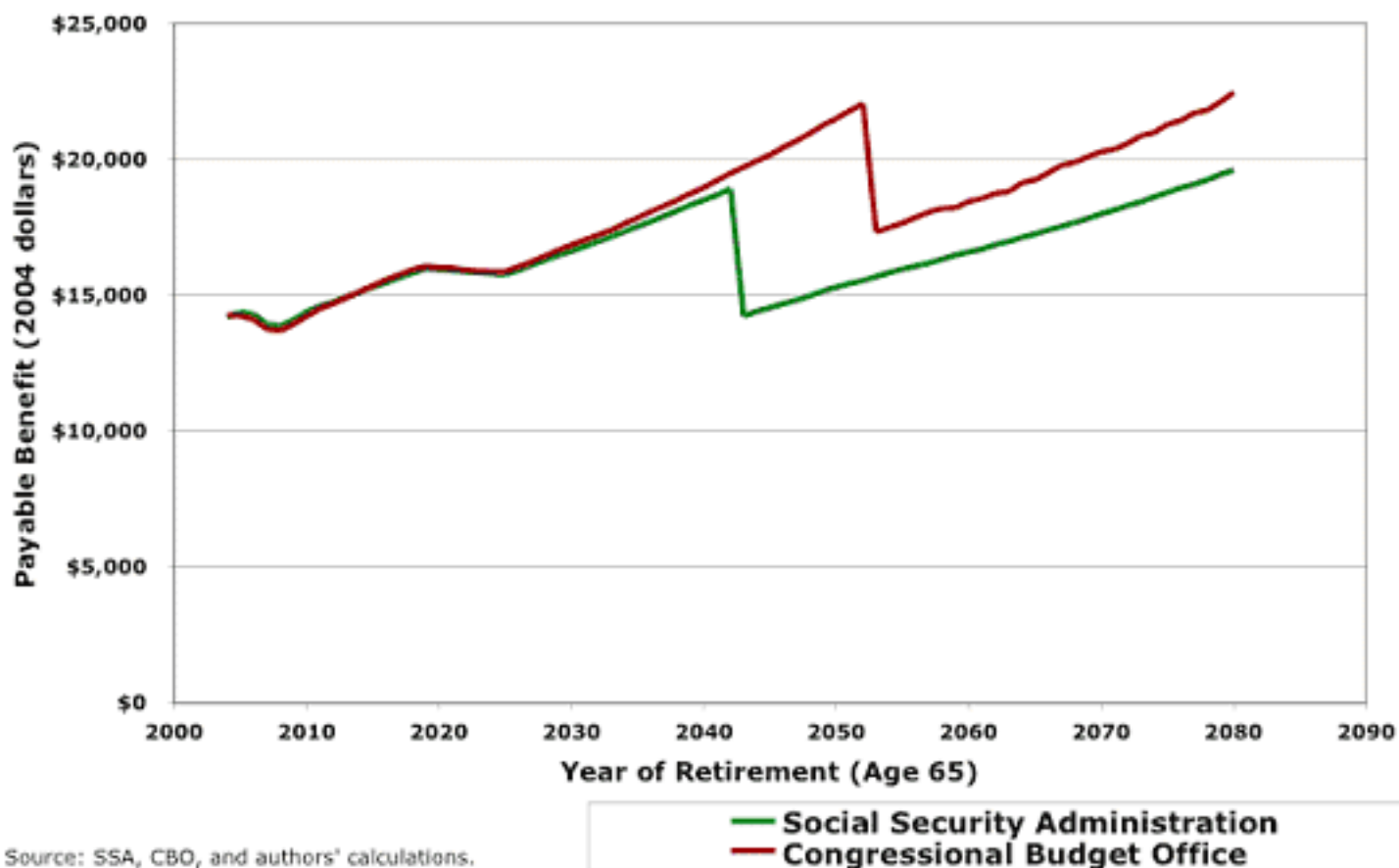
**Dean Baker and David Rosnick<sup>1</sup>**

**March 2005**

### **1) Social Security is Financially Sound**

According to the Social Security trustees report, the standard basis for analyzing Social Security, the program can pay all benefits through the year 2042, with no changes whatsoever. Even after 2042 the program would always be able to pay retirees a higher benefit (in today's dollars) than what current retirees receive. The assessment of the non-partisan Congressional Budget Office is that Social Security is even stronger. It projects that Social Security can pay all benefits through the year 2052 with no changes whatsoever. By either measure, Social Security is more financially sound today than it has been throughout most of its 69-year history

### Payable Benefit with No Changes

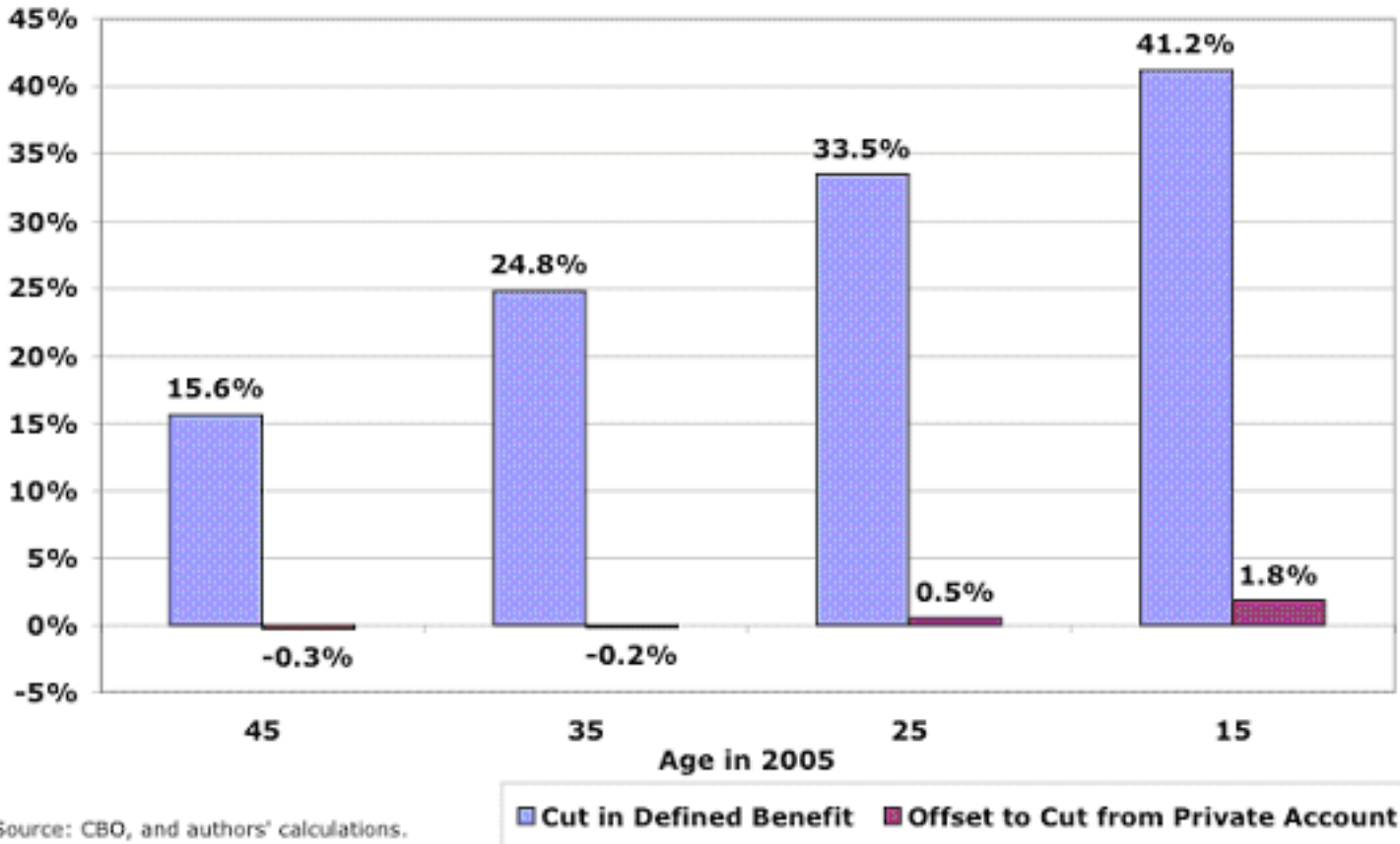


## 2) President Bush's Social Security Cuts Would Be Large

The proposal that President Bush is using as the basis for his plan phases in cuts over time. A worker who is 45 today can expect to see a cut in guaranteed benefits of around 15 percent. A worker who is age 35 can expect to see a cut in the guaranteed benefit of approximately 25 percent. A 15 year old who is just entering the work force can expect a benefit cut of close to 40 percent. For a 15 year old, this cut would mean a loss of close to \$200,000 in Social Security benefits over the course of their retirement (see appendix).

Private accounts will allow workers to earn back only a small fraction of this amount. For example, a 15 year-old can expect to make back approximately \$9,000 from the \$200,000 cut with the earnings on a private account. If this worker retires when the market is in a slump, then it could make their loss even bigger.

### Benefit Cuts Under the Bush Proposal (compared to scheduled benefits)

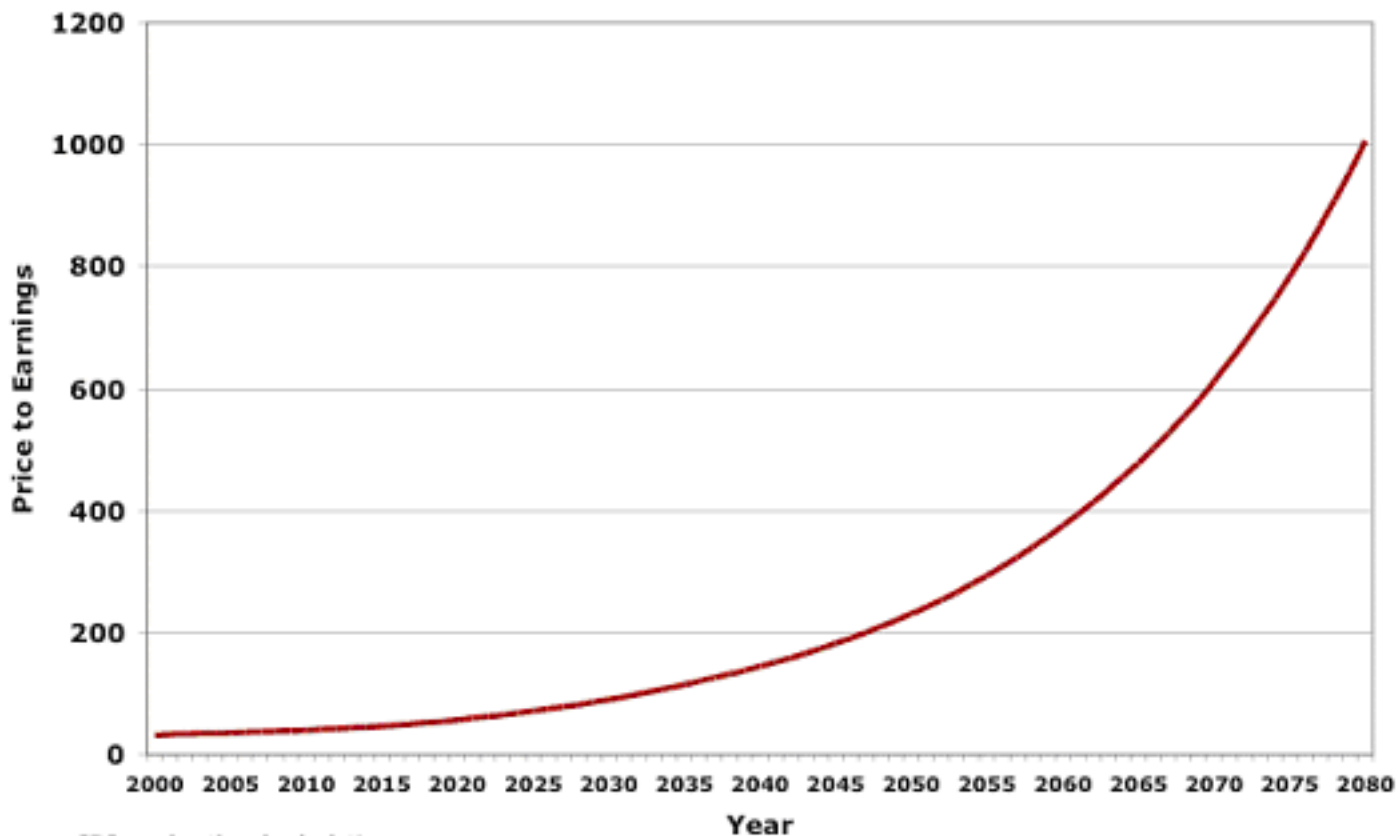


### 3) Imaginary Stock Returns Don't Offset Real Benefit Cuts

Proponents of private accounts have often used highly exaggerated assumptions on stock returns to argue for the benefits of private accounts. For example, even at the height of the stock bubble in 2000, when the price to earnings ratio in the market exceeded 30 to 1, many proponents of private accounts assumed that stocks would generate 7.0 percent real returns annually. This assumption was absurd on its face - it implied that price to earnings ratios would rise to levels of more than 100 to 1. Unfortunately, even the Social Security Administration has used these unfounded assumptions in assessing privatization plans.

Given current price to earnings ratios and the Social Security trustees' profit growth projections, real stock returns will average less than 5.0 percent annually. Some proponents of private accounts are still using exaggerated stock return assumptions to advance their case.

### Price to Earnings Ratio Assuming a 6.8% Return



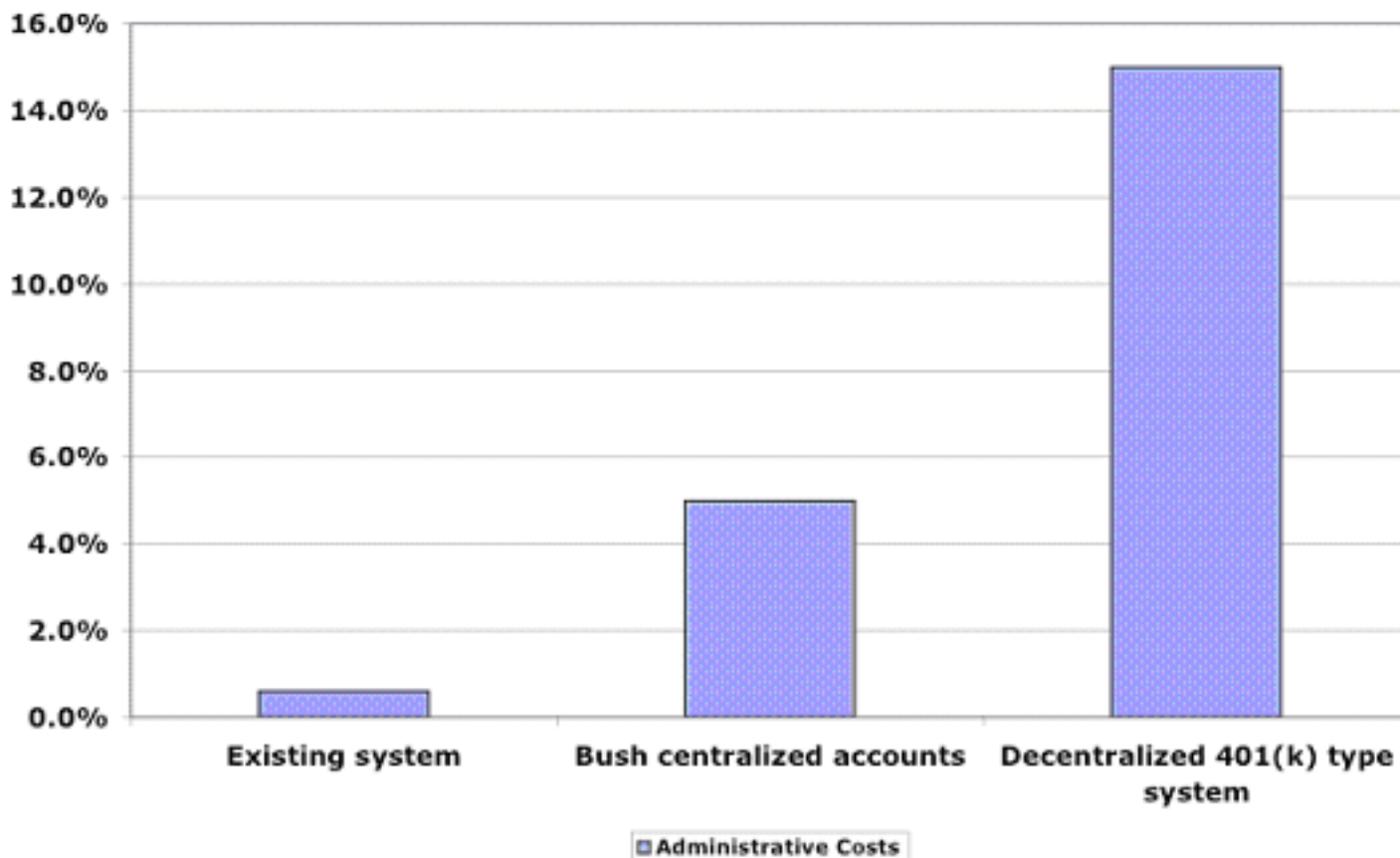
Source: CBO, and authors' calculations.

#### 4) Social Security is Extremely Efficient, Private Accounts Are Wasteful

On average, less than 0.6 cents of every dollar paid out in Social Security benefits goes to pay administrative costs. By comparison, systems with individual accounts, like the ones in England or Chile, waste 15 cents of every dollar paid out in benefits on administrative fees. President Bush's Social Security commission estimated that under their system of individual accounts 5 cents of every dollar would go to pay administrative costs.

In addition, under Social Security workers automatically get an annuity (a life-long monthly payment) when they retire. By contrast, financial firms typically take 10 to 20 percent of workers' savings to provide an annuity when they reach retirement.

### The Efficiency of Social Security



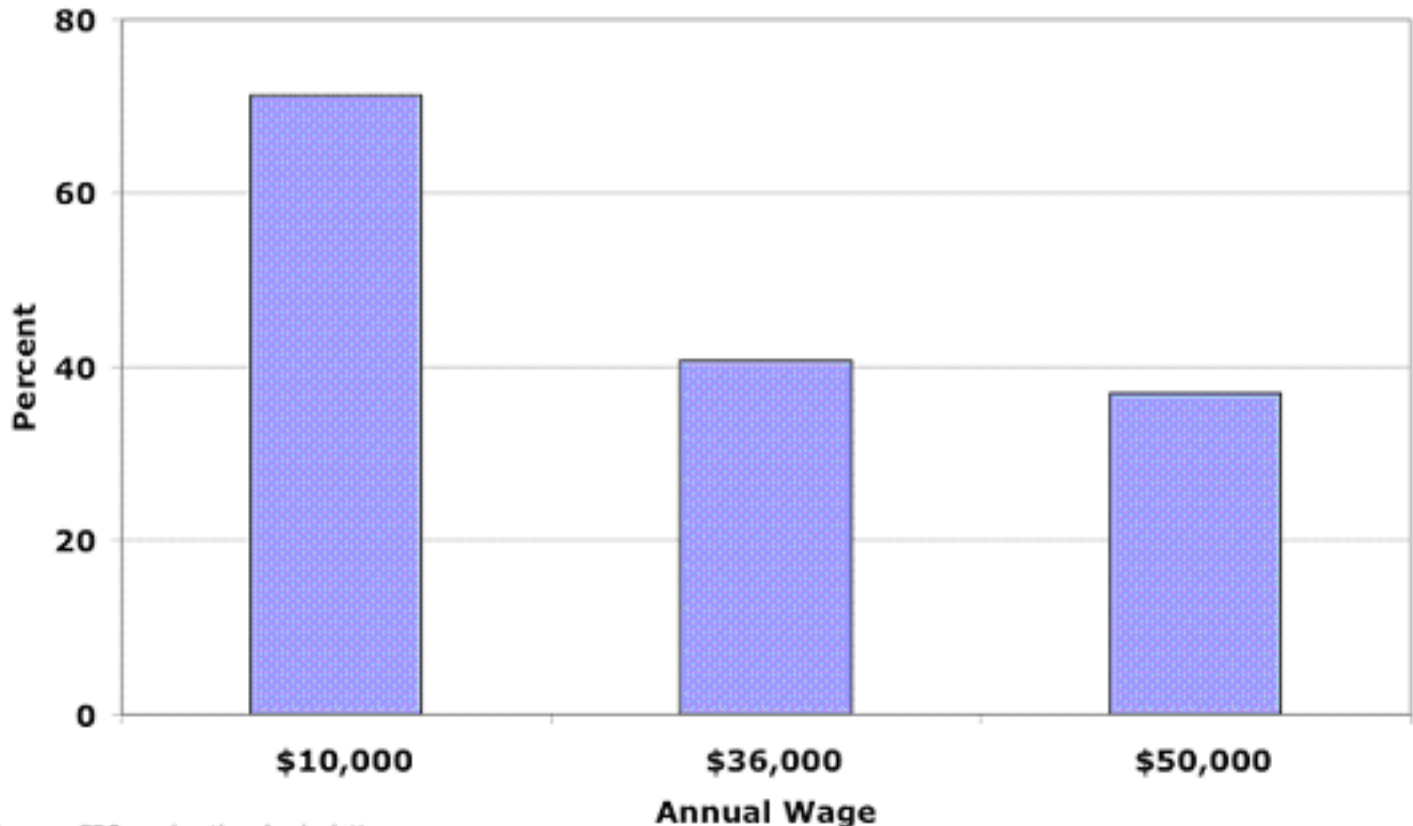
Source: SSA and authors' calculations.

### 5) Social Security Pays the Most to Those Who Need it Most

Social Security benefits are highly progressive, so that low wage workers get a much higher share of their wages in benefits than do high wage workers. A worker who earned \$10,000 a year during their working lifetime can expect to see a benefit that is equal to approximately 70 percent of their average wage. A worker who earned \$36,000 a year will get a benefit that is equal to approximately 40 percent of their wage, while a worker who earned \$50,000 on average will get a benefit that is equal to 35 percent of their wage.

While poorer workers do not live as long as higher paid workers, the progressive benefit structure largely offsets differences in life expectancy (as do disability and survivors benefits for those who do not live to normal retirement age). Furthermore, since plans are being made for the distant future, the United States could reduce the gaps in life expectancy by income and race, as other countries have done.

## Benefits as a Percent of Average Wage



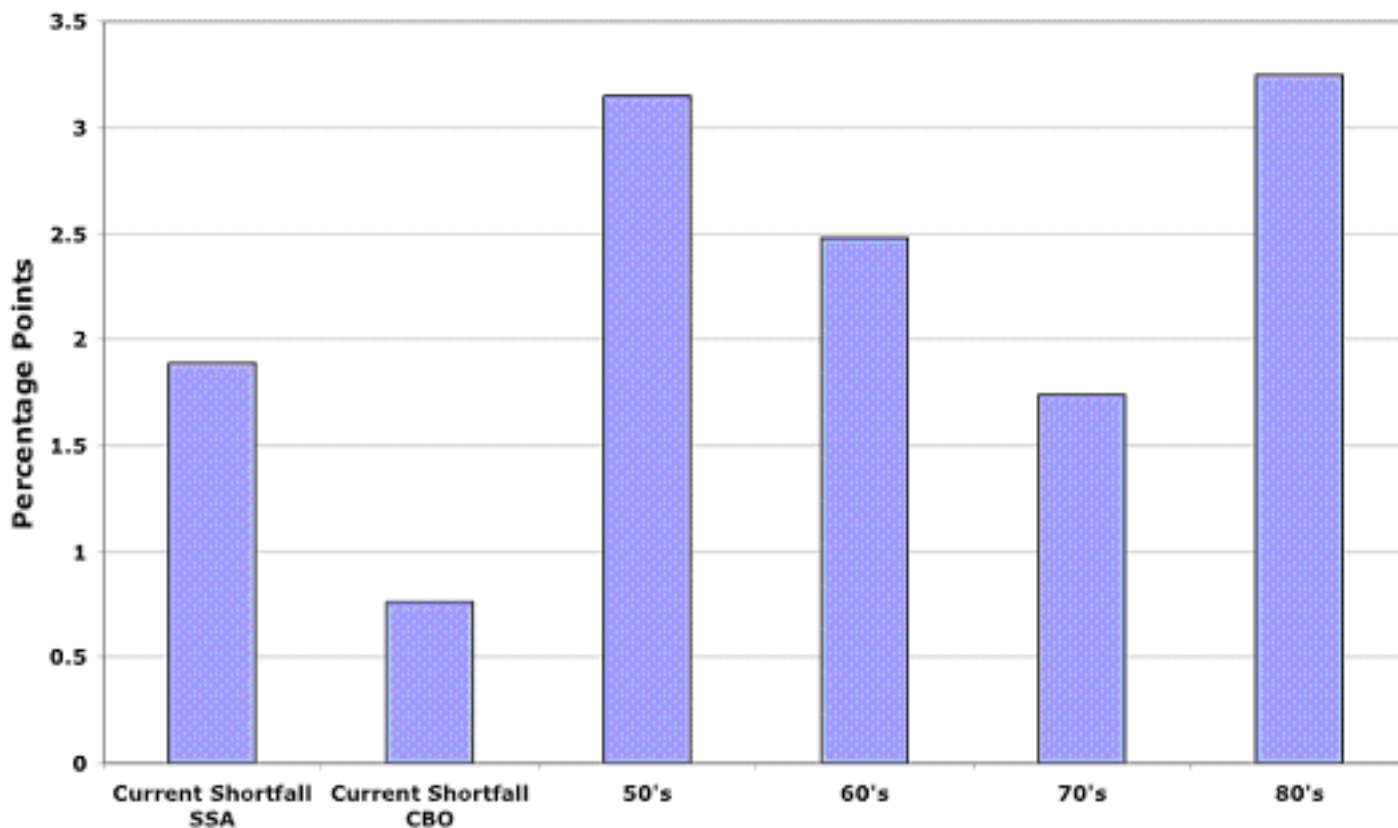
Source: CBO, and authors' calculations.

### 6) The Projected Shortfall is No Larger Than What We Have Seen In Past Decades

It has been necessary to raise Social Security taxes in the past, primarily because people are living longer than they used to. The tax increase that would be needed to make the program fully funded over its seventy-five year planning period is actually smaller than tax increases we have seen in prior decades. In other words - it would have made more sense to talk of a Social Security "crisis" in 1965 than in 2005. In fact, according to the Congressional Budget Office estimates, Social Security can be made solvent throughout its seventy five year planning period with a tax increase that is less than one quarter as large as the one in the eighties.

While tax increases are never popular, the fact is that prior tax increases did not prevent decades like the fifties or sixties from being periods of great prosperity. Of course, if the economy maintains anywhere near its recent pace of growth, any tax increases can be put off for many decades into the future, and possibly forever.

## Tax Increases as a Percent of Taxable Payroll

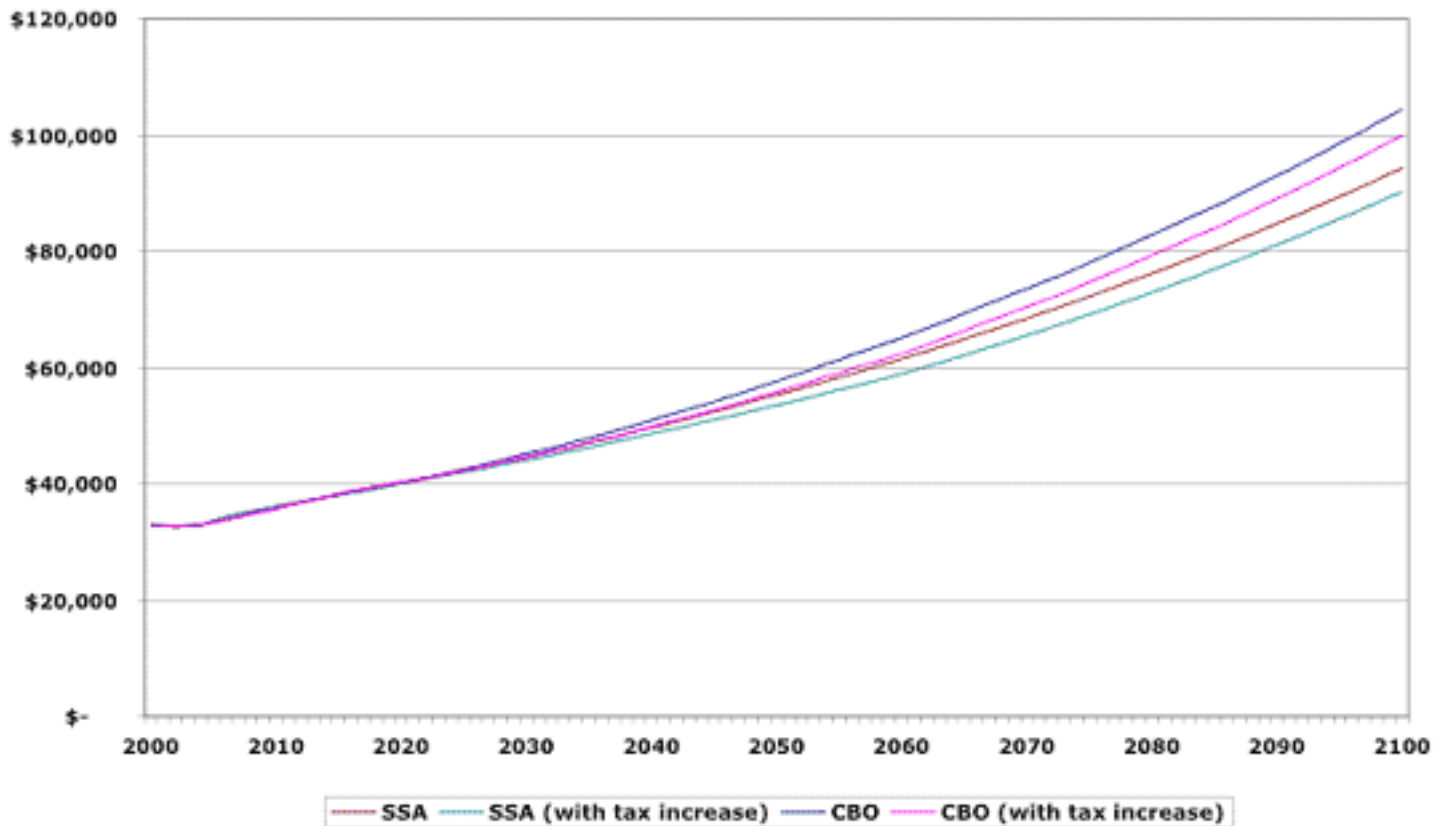


Source: SSA, CBO, and authors' calculations.

### 7) Young Workers Will Still See Much Higher Wages If Taxes Are Increased

If it proves necessary to raise more money for Social Security through taxes, workers will still see large increases in their after-tax wages. This is true even if they end up paying a larger share of their wages in Social Security taxes. According to the Social Security trustees' projections, the average after-Social Security tax wage for a worker in 2050, will still be more than 70 percent higher than it is today, even if taxes are raised to keep the program solvent. The CBO projections imply an even larger increase in after-tax wages.

Raising payroll taxes is not the only way to increase the revenue for Social Security. An alternative is to raise the ceiling on taxable wages. Currently, no Social Security taxes are paid on income earned above \$87,900 in any given year. If the ceiling were raised to \$110,000 to cover 90 percent of the country's income from wages (the level set by the Greenspan commission in 1983), it would eliminate approximately 40 percent of the projected funding shortfall. Using the CBO projections, this change alone would be almost enough to make the program solvent through the seventy-five year planning period.

**Average Annual Wage (After Social Security Taxes)**

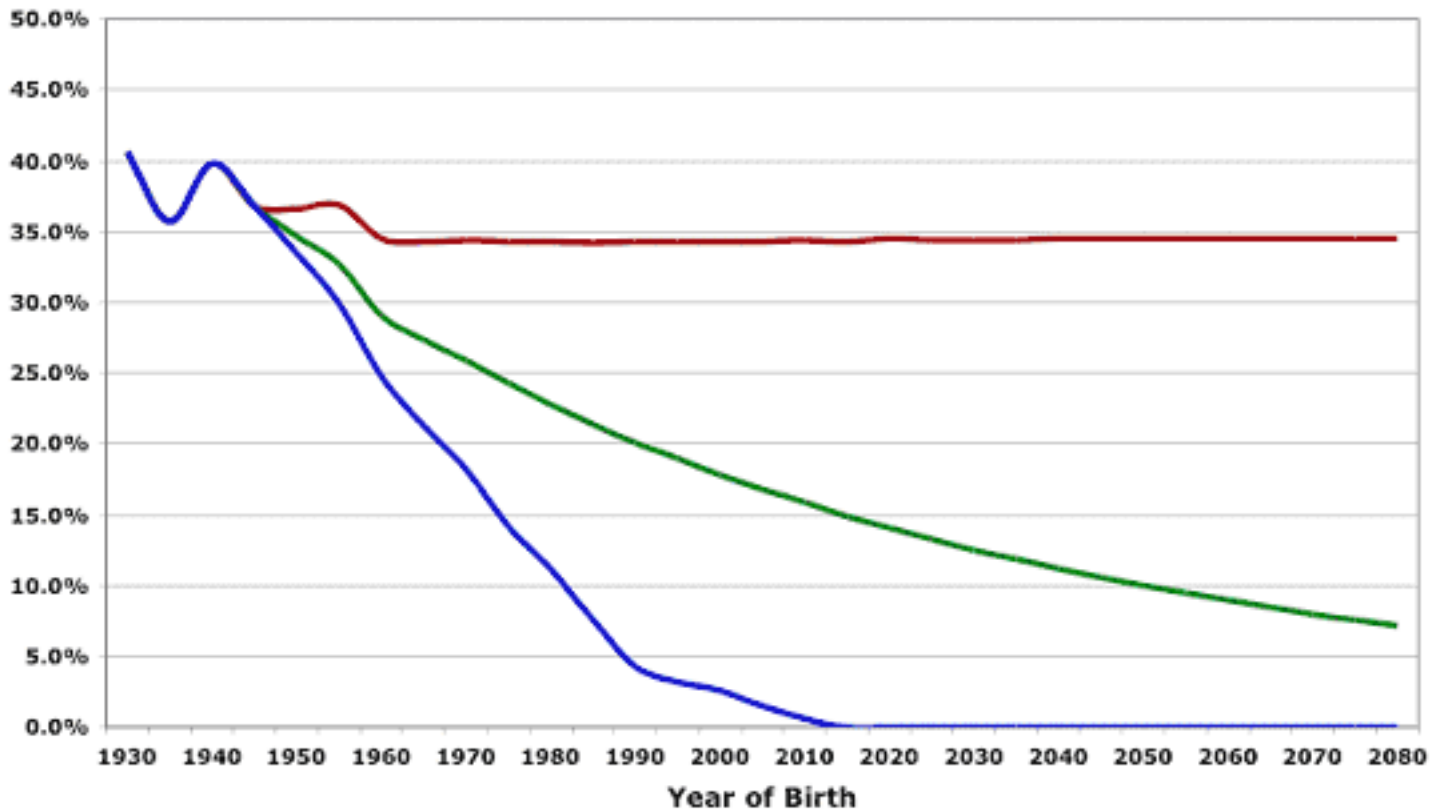
Source: SSA, CBO, and authors' calculations.

**8) The Bush Proposal Phases Out Social Security as We Know It**

President Bush's proposal gradually shrinks the traditional guaranteed Social Security so that it will eventually become irrelevant for middle income workers. For today's twenty year old average wage earners, the guaranteed benefit will be equal to just 21 percent of their annual earnings when they reach retirement age. The guaranteed benefit will be equal to just 15 percent of annual earnings for a child born ten years from now.

As the traditional Social Security benefit becomes less important for middle-income workers, Social Security will increasingly become a poor people's program. This may be a clever strategy if the purpose is to undermine political support for Social Security; it is not a good way to structure the program if we expect it to be there for our children and grandchildren.

### First-Year Defined Benefit as Percent of Earnings at Retirement



Source: CBO, President's Commission, State of the Union Backgrounder, and authors' calculations.

— Current Law — Without Private Account — With Private Account

## Appendix

### Calculating Projected Benefit Cuts Under Plan 2 from President Bush's Commission to Strengthen Social Security

Plan 2 calls for changing the indexation formula for Social Security benefits, so that benefits would only rise in step with inflation rather than wages. This means that benefits under plan 2 would fall behind the scheduled benefits from the current Social Security program by the amount of projected real wage growth (the difference between wage growth and inflation).

To see how this works, imagine a 20 year-old worker who enters the labor force in 2005. Assume that the worker always earns the average wage in the economy (approximately \$36,500 in 2005). According to the projections of the Congressional Budget Office, if this worker retires at age 65 in 2050, he/she is scheduled to receive a benefit equal to approximately \$22,000 (in 2005 dollars). On average, this worker can expect to collect benefits for 20.9 years, which means that the total scheduled Social Security benefit over the course of retirement is \$460,000 (in 2005 dollars).

Projected real wage growth over this period averages 1.2 percent. This means that each year the benefit

under Plan 2 falls 1.2 percent further behind the scheduled benefit. Assuming that Plan 2 takes effect in 2009, this would mean that the worker would lose 1.2 percent of their scheduled benefit for each of the 39 years (2009 to 2047, when the worker turns 62) included in their benefit calculation. This would leave the benefit at the point of retirement in 2050 at 63 percent ( $1.012^{-39}$ ) of the scheduled benefit. The lifetime benefit under Plan 2 is therefore \$290,000, or \$170,000 less than the scheduled benefit.

See the Accurate Benefits Calculator (<http://www.cepr.net/pages/sscalculator.htm>) for more examples. Precise details of the calculation methodology follow:

### ***Methodology***

(available as PDF at [http://www.cepr.net/publications/sscalculator\\_tech\\_notes.pdf](http://www.cepr.net/publications/sscalculator_tech_notes.pdf))

### **General Projections**

The CPI-W, Adjusted Wage Index (AWI), and nominal GDP are assumed to grow in line with the Congressional Budget Office (CBO) long-term economic projections for Social Security (<http://cbo.gov/showdoc.cfm?index=6064&sequence=0>)

The Treasury bond rate (T) for a given year is assumed to be the Average Real Annual Interest Rate (I) projected by CBO inflated by growth in the CPI-W over the previous year (C) by the formula

$$T = (1 + I) \times (1 + C)$$

The Contribution Base is computed as described by Social Security (<http://www.ssa.gov/OACT/COLA/cbbdet.html>)

The minimum incomes to qualify for a Quarter (of a year) of Coverage are computed as described by Social Security (<http://www.ssa.gov/OACT/COLA/QC.html>)

The percent payable benefit (P) in a given year is 100% in years earlier than 2053, and less thereafter according to the formula  $P = 0.124 / (0.124 + C - I)$  where C is the CBO estimate for scheduled outlays as a share of taxable payroll, and I is the CBO estimate for revenues as a share of taxable payroll.

Life expectancy for an individual is assumed to be the cohort life expectancy at age 65, averaged for males and females and rounded to the nearest whole year. Gender specific cohort life expectancies used in this calculation are come from the 2004 Social Security Trustees' Report, Table V.A4. (<http://www.ssa.gov/OACT/TR/TR04/lr5A4-a.html>)

The annual Cost of Living Adjustment (COLA) is computed as described by Social Security. (<http://www.ssa.gov/OACT/COLA/colaseries.html>)

The minimum wage is assumed to be \$5.15 per hour through 2008, and indexed to the CPI-W thereafter.

The 2004 poverty threshold for a single worker is \$9,060 per year and \$11,418 per year for a couple. The poverty threshold is indexed to the CPI-W thereafter, rounding to the nearest dollar.

The bend points in the Primary Insurance Amount (PIA) formula are computed as described by Social Security. (<http://www.ssa.gov/OACT/COLA/piaformula.html>)

The three PIA factors in the formula are assumed to be 90%, 32%, and 15% under current law, and deflated by growth in the real wage starting in 2009 under price indexing as described by the Social Security Trustees' memo on Model 2 reform section II.a.1. ([http://www.ssa.gov/OACT/solvency/PresComm\\_20020131.html](http://www.ssa.gov/OACT/solvency/PresComm_20020131.html))

The bend points in the maximum family benefit formula are computed as described by Social Security. (<http://www.ssa.gov/OACT/COLA/familymax.html>)

Consistent with the CBO analysis of model 2 reform, (<http://www.cbo.gov/showdoc.cfm?index=5666&sequence=0>)

the private account portfolio is assumed to be 50% equities, 30% corporate bonds, and 20% Treasury bonds. The real rate on Treasury bonds is assumed to be 3.3% (5.5726% nominal) and the real rate on corporate bonds is assumed to be 3.8% (6.0836% nominal).

### Computing the return on equities

The nominal (stable) return on equities is computed as follows:

Capital gains may be determined by

$$\frac{P_Y}{P_{Y-1}} = \frac{P_Y/E_Y}{P_{Y-1}/E_{Y-1}} \frac{E_Y}{E_{Y-1}}$$

where P is the stock price, and E the earnings. Similarly, dividend payouts may be determined by

$$\frac{D_Y}{P_{Y-1}} = \frac{D_Y/E_Y}{P_{Y-1}/E_{Y-1}} \frac{E_Y}{E_{Y-1}}$$

Because the return to stocks (N) must come from capital gains and dividends,

$$1 + N_Y = \frac{P_Y + D_Y}{P_{Y-1}} = \frac{P_Y}{P_{Y-1}} + \frac{D_Y}{P_{Y-1}} = \frac{P_Y/E_Y}{P_{Y-1}/E_{Y-1}} \frac{E_Y}{E_{Y-1}} + \frac{D_Y/E_Y}{P_{Y-1}/E_{Y-1}} \frac{E_Y}{E_{Y-1}}$$

$$= \left( \frac{P_Y/E_Y}{P_{Y-1}/E_{Y-1}} + \frac{D_Y/E_Y}{P_{Y-1}/E_{Y-1}} \right) \frac{E_Y}{E_{Y-1}}$$

Assuming earnings grow in step with GDP,

$$1 + N_Y = \left( \frac{P_Y/E_Y}{P_{Y-1}/E_{Y-1}} + \frac{D_Y/E_Y}{P_{Y-1}/E_{Y-1}} \right) \frac{GDP_Y}{GDP_{Y-1}} = \left( \frac{P_Y/E_Y}{P_{Y-1}/E_{Y-1}} + \frac{D_Y/E_Y}{P_{Y-1}/E_{Y-1}} \right) (1 + G_Y)$$

where  $G$  is the year's growth in GDP. Assuming also a constant price-to-earnings ratio and a constant dividend payout (dividend to earnings ratio),

$$1 + \hat{N}_Y = \left( 1 + \frac{D/E}{P/E} \right) (1 + G_Y)$$

We see that the nominal return on stocks must be tied directly to nominal growth in the economy.

If we relax the constraint on the price-to-earnings ratio we may see that

$$\frac{P_Y/E_Y}{P_{Y-1}/E_{Y-1}} + \frac{D/E}{P_{Y-1}/E_{Y-1}} = \frac{1 + N_Y}{1 + G_Y}$$

$$\frac{P_Y/E_Y}{P_{Y-1}/E_{Y-1}} = \frac{1 + N_Y}{1 + G_Y} - \frac{D/E}{P_{Y-1}/E_{Y-1}}$$

$$P_Y/E_Y = \left( \frac{1+N_Y}{1+G_Y} - \frac{D/E}{P_{Y-1}/E_{Y-1}} \right) P_{Y-1}/E_{Y-1} = \frac{1+N_Y}{1+G_Y} P_{Y-1}/E_{Y-1} - D/E$$

The stable return in this calculator assumes a price-to-earnings ratio of 21 and dividends of 60% of earnings, (or  $0.6/21 = 2.857\%$  of prices.) The long-term nominal return under CBO growth assumptions is approximately 6.64%, or 4.35% after inflation.

The total portfolio in an account is assumed to be 50% equities, 30% private bonds, and 20% Treasury bonds. The return on Treasury bonds is as described above (3.3% real in the long run) and the return on private bonds nets a 50 basis-point real premium (or 3.8%.) This results in a nominal portfolio return of 6.26% and a real portfolio return of 3.97% before administrative fees.

The minimum allowable long-run stock return is 100 basis points lower than stable, or 5.64%. This results in a portfolio return of 5.76% (3.48% real) before fees. The maximum allowable long-run stock return is 250 basis points above stable, or 9.14%, or 6.79% real. The maximum return results in a portfolio return before fees of 7.51%, or 5.20% real. This is the annual return assumed by CBO in its non risk-adjusted analysis. (<http://www.cbo.gov/showdoc.cfm?index=5666&sequence=0>)

When an additional stock premium is assumed, the premium is applied to years beginning in 2005, but no earlier than the year in which the worker attains age 22.

Annual fees on accounts are deducted in the same manner that stock premiums are added. That is, the long-run nominal portfolio return is 5.96% (3.68% real.)

### **Computing the Nominal Earnings for a worker**

The nominal earnings for a worker is computed as follows:

The user inputs dollar figure. Let Q be this figure divided by the (estimated) AWI for 2005. Earnings in individual years are determined as follows. From age 45 to retirement the will generally be 1.02 times Q times the AWI to the earnings year. (That is, an average earner will make 2% more than the AWI starting at age 45.) In each year prior to age 45, 1.02 times Q will be reduced by a constant amount necessary to result in an AIME equal to 1/12 the AWI at age 60 for a worker that does not take time off and retires at age 65. If, at age 22 this results in earnings less than four times the minimum for a Quarter of Coverage, then the annual reduction will be moderated to attain the minimum, and the final Q will be reduced sufficiently to result in the desired AIME. Mathematically, this is seen as follows:

$Q = \frac{D}{AWI_{2005}}$ , where D is the input dollar figure and  $AWI_{2005}$  is the AWI in year 2005. Let

$$E = \frac{AWI_{61} + AWI_{62} + AWI_{63} + AWI_{64}}{AWI_{60}}$$

. The annual percentage point reduction at each age is computed as

$$R = \max\left(0, \min\left\{\left[1.02 \times (31 + E) - 35\right] \times Q / 120, \left(1.02 \times Q - 4 M_{22} / AWI_{22}\right) / 23\right\}\right)$$

where  $M_{22}$  is the minimum and  $AWI_{22}$  is the AWI for the year when the worker is age 22. The final earnings factor F is therefore  $F = (120R + 35Q) / (31 + E)$ . Finally, in a year of work at age A, the earnings are

$$N_A = \max\left[F - R \times \max(0, 45 - A) \times AWI_A, 4M_A\right]$$

The first three years of work are assumed to be at ages 22-25. A worker's fourth year of work may be delayed based on input control. Note that the minimum year's earnings a worker may accept is that of four times that needed to record a Quarter of Coverage. That is, every year of work is covered. This minimum yearly amount is roughly 10% of the AWI. Workers that take many years off of work may wind up earning much less than 10% of the AWI on the average, but no less than that in any given year of work.

This worker is considered to be the primary earner. A spouse may be included at 1/3 the wages of the primary earner.

Taxable earnings are calculated as the minimum of the nominal earnings and the computed Contribution Base for that year.

The AIME, current-law PIA, maximum family and current-law retirement benefit for each worker are calculated as described by Social Security: <http://www.ssa.gov/OACT/ProgData/retirebenefit1.html>

The modified PIA is computed as current-law, but with price-index PIA factors as described above.

The modified retirement benefit is computed as current-law, but using the modified PIA. If the enhanced low-earner benefit is included, the modified PIA is multiplied by a factor as described in [http://www.ssa.gov/OACT/solvency/PresComm\\_20020131.html](http://www.ssa.gov/OACT/solvency/PresComm_20020131.html) Section II.a.2.

For a married worker (in both the current-law and modified-benefit cases,) the family benefit that may be paid is the greater of the sum of the worker's benefits and roughly 150% of the larger benefit (the latter capped at the corresponding family maximum for that worker.)

For workers retiring early, the exact factor for computing the 50% spousal benefit is computed as described by Social Security: <http://www.ssa.gov/retire2/retirechart.htm>

“Age to Receive Full Social Security Benefits” The appropriate percentage is specified in the corresponding link for each “Year of Birth” in the table.

The payable benefit under current law is the computed benefit (family or individual) multiplied by the percentage payable benefit (described above) in the first year of retirement.

### **The private account**

The maximum diversion (D) to a private account for each earner is generally computed as

$$D = [1000 + 100 \times (Y - 2009)] AWI_{Y-1} / AWI_{2008}$$
 where Y is the year,  $AWI_{Y-1}$  is the previous year's AWI, and  $AWI_{2008}$  is the AWI in 2008. To contribute in 2009, the worker must be born no later than 1965. To contribute in 2010, the worker must be born no later than 1978. Each worker may divert up to 4% of taxable earnings up to the maximum diversion.<sup>2</sup> For simplicity, spousal contributions are credited to the same accounts as the primary worker's accounts.

Diverted monies are double-counted in parallel accounts: the private account and the notional account. Until retirement, the private account accumulates interest at the nominal portfolio rate of return, less annual fees. The notional account accumulates interest at the rate of return for Treasury bonds.

At retirement, the notional account is annuitized at no cost so as to provide a constant real monthly benefit. This amount, rather than being credited to the worker, is deducted from the worker's defined benefits as a clawback up to the total amount of defined benefits. Spousal benefits are computed based on the defined benefits before clawback.

Also at retirement, the private account may be annuitized, assuming a specific fee as a percentage of the sum to be annuitized. The amount to be annuitized must be at least enough, in conjunction with defined benefits after clawback, to provide monthly benefits at a poverty level. If the account is insufficiently large to provide the benefit, then the entire sum must be annuitized. If the defined benefit after clawback is itself sufficient, then none of the sum must be annuitized. Any sum not annuitized may be

passed on as an inheritance. The maximum total benefit to an account holder is the defined benefit after clawback, plus the fully annuitized private account. The minimum total benefit is the defined benefit after clawback, plus the worker's minimum annuitized sum.

Annuities, both notional and private, are calculated as the real annual amount needed to be withdrawn from an account accumulating interest at the rate of return for Treasury bonds, and at the beginning of each year in order to cover twelve monthly payments through the average expected lifetime after retirement (life expectancy at age 65, less working years after age 64).

### **Endnotes:**

1. Dean Baker is the co-director of the Center for Economic and Policy Research. David Rosnick is a research assistant at the Center for Economic and Policy Research.
2. Note that after 2040 the cap exceeds 4% of the Contribution Base and all workers may divert 4% of their taxable earnings.