



Can Individual Accounts Really Rescue Social Security?

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President Bush has proposed allowing workers to divert part of their current Social Security tax to their own individual accounts, and his Commission to Strengthen Social Security (CSSS) has recently outlined these models. Critics of the approach contend that diverting current tax revenues to individual accounts will reduce Social Security revenues and weaken the system's finances. Proponents counter that individual accounts will provide current workers with a higher return on their taxes, allowing Congress to reduce traditional benefits and thus narrow the system's financing gap.

This brief uses the Social Security Policy Analysis Model (SSPAM), a new model developed by the Actuarial Research Corporation, to analyze the impact of individual accounts.¹ Using several different assumptions about the accounts' structure and average rates of return, it reviews the impact on the financial status of Social Security and the general federal budget, assuming that general budget funds are used to cover some of the transition costs.²

The analysis shows that most of the individual account scenarios examined worsen the long-range deficit of the Social Security system. To have a positive effect on the system's financing, an individual account program would need to have a centralized management structure, invest a sizable chunk of all account balances in equities,

realize equity returns at least as high as those in historical experience, and include a mechanism taxing away at least 75 percent of the account balances at retirement. Even if the program did not worsen the long-range deficit, the government would have to borrow as much as \$6 trillion (at today's prices) to finance the transition.

Structuring Individual Accounts

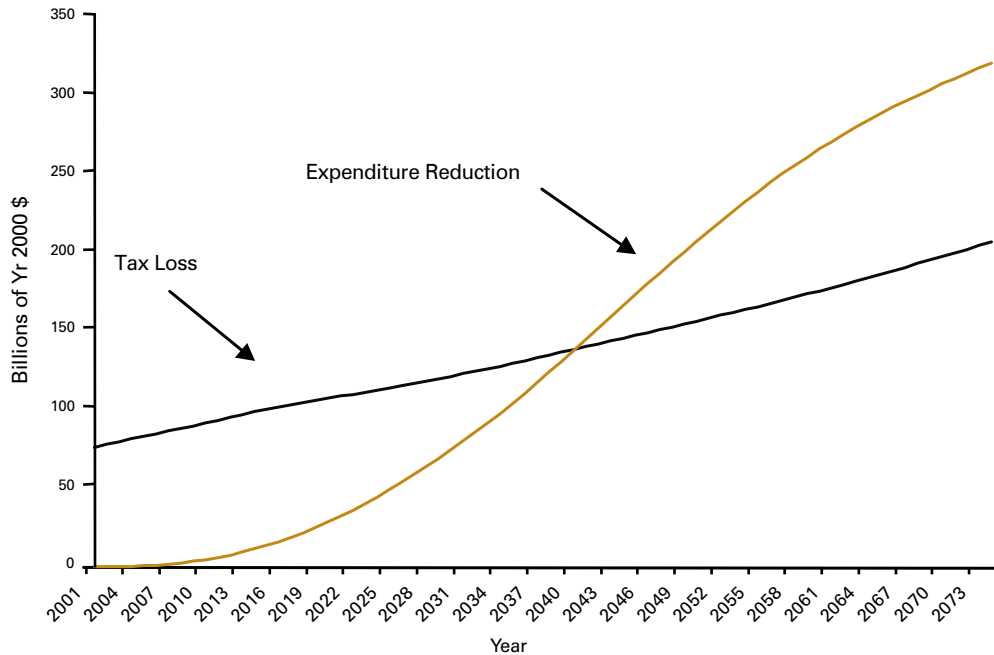
The current payroll tax for Social Security cash benefits—12.4 percent—is divided equally between employer and employee. Like most individual account proposals, the plans analyzed here shift 2 percentage points of the total tax to individual accounts, leaving 10.4 percent to finance the rest of the benefit package.³

The plans analyzed here also alternate between the two most common management models: The individual retirement account model allows workers to choose among a wide variety of account managers and investment vehicles. The model of the federal government's employee thrift savings plan offers only a limited number of investment options and is administered by a government agency. The advantage of the first, decentralized approach is greater worker choice. The advantage of the second, centralized approach is lower administrative costs.⁴

All plans that divert a portion of the current payroll tax also include a mechanism for reducing future benefits financed with the remaining portion of the tax. Many recent plans recommend establishing a recapture tax to reduce future benefits. Under this approach, an individual's currently scheduled benefit would be reduced either by some fraction of the annuity value of the amount that has accumulated in his or her individual account or by the amount that would have accumulated if the account had earned a specified interest rate.

Recapture taxes have the advantage of allowing participation to be voluntary, since those who

FIGURE 1.
Base Case: Changes in Taxes and Benefits
2 Percent Carve-Out and 100 Percent Benefit Offset



Source: Actuarial Research, Inc., Social Security Policy Analysis Model.

do not want to participate are not subject to the benefit reductions. The variant that relates the tax to actual account balances also guarantees that individual workers' future benefits will be no lower than promised under current law.⁵ This approach will be used in the examples in this brief.

Base Case Financial Flows

Our base case illustrates in simple terms how individual accounts affect the financing of the system. It assumes individual accounts earn interest at the government bond rate, does not take into account administrative costs, and recaptures 100 percent of the value of the individual accounts through benefit reductions. We assume the individual accounts became effective at the beginning of 2001 and that all persons then working chose to participate. Figure 1 shows the changes in Social Security taxes and benefits under such a plan.⁶

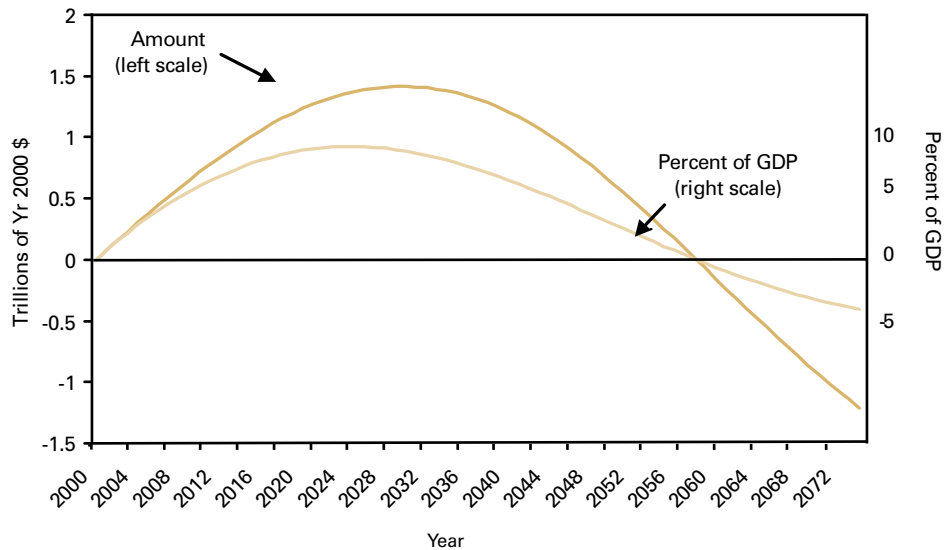
Although Social Security is running a substantial surplus, expenditures are expected to exceed revenues in about 25 years. Under the

2000 Trustees' Report assumptions, the present value of spending over the next 75 years exceeds the present value of revenues by some \$4.3 trillion. The gap amounts to 1.89 percent of projected taxable payroll, a figure commonly cited as the long-range deficit.⁷

A 2 percent carve-out would divert \$76 billion, about 0.8 percent of GDP, to individual accounts the first year. The amount would grow steadily as the real value of the total taxable payroll grew, to about \$200 billion annually (in 2000 prices) by 2073. Benefit payments would change little in the early years, because the individual account balances of retiring workers would be small. Over time, however, benefit reductions would increase, reaching \$50 billion a year after about 25 years and exceeding tax losses in every year after 2041.⁸

The difference between the change in program expenses and the change in program revenues is the cost of the transition to individual accounts. The time pattern of this transition cost is shown in figures 2 and 3. The first figure ignores the time value of money, a common

FIGURE 2.
Base Case: Transition Cost without Interest on Budget Transfers



Source: Actuarial Research, Inc., Social Security Policy Analysis Model.

Note: The transition cost is the amount of cumulative federal budget transfers required to cover net changes in revenues and expenditures resulting from the introduction of individual accounts.

approach used in budget debates, so that \$1 received 10 years from now has the same value as \$1 received tomorrow. The second adds the cost of interest payments on the money that would have to be borrowed early on, when revenue reductions were larger than expenditure reductions.

Figure 2 traces the cumulative difference between revenue reductions and expenditure reductions. The cumulative difference—the pure transition cost—rises to some \$1.4 trillion in 2030, and then declines steadily.⁹ Relative to the economy as a whole, it cumulates to just under 10 percent of GDP in 2025, but then disappears roughly 60 years after the change is introduced.

Figure 3 traces the same cumulative difference but adds in the additional cost associated with financing the transition entirely through general fund borrowing. When the calculation includes debt service costs, benefit savings are never large enough to cover the combination of the lost Social Security tax revenue and increased interest expense. The total transition cost grows

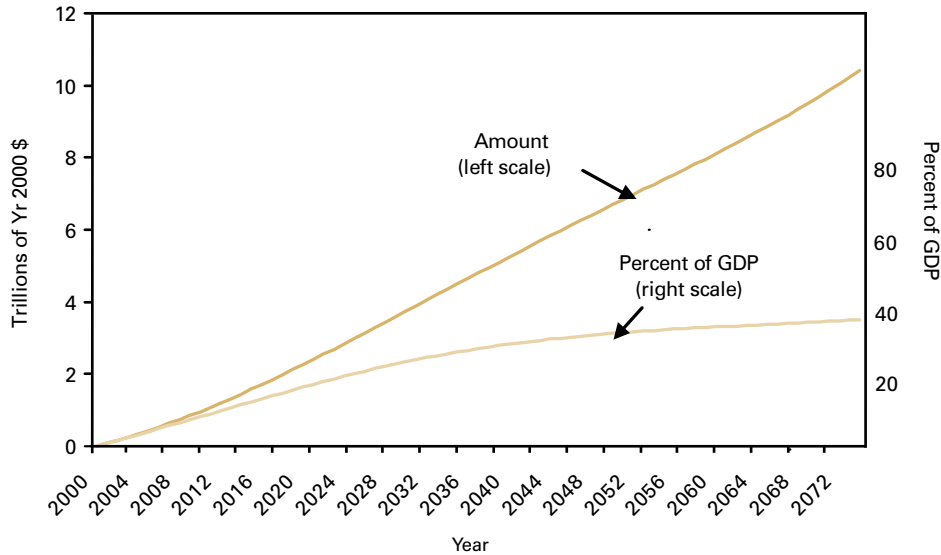
steadily throughout the 75-year transition period, reaching \$9.8 trillion (in 2000 dollars), or 33 percent of GDP, by 2074. Counting the interest cost of the transition debt, Social Security’s average long-run deficit rises to 2.59 percent of payroll.¹⁰

Alternative Scenarios

To better understand the impact of individual accounts, we use the SSPAM model to project a variety of more realistic scenarios. Under these scenarios, individual accounts earn returns higher than the government bond rate, and incur administrative costs that are deducted from their gross returns. They also allow benefit reduction rates of either 75 percent or 100 percent of the value of the account. Table 1 shows the projected 75-year deficit in Social Security, including transition costs.

The rate-of-return alternatives are shown as a differential between the average returns on individual accounts and the government bond rate. The zero differential shows the outcome when average returns are equal to the government

FIGURE 3.
Base Case: Transition Cost with interest on Budget Transfers



Source: Actuarial Research, Inc., Social Security Policy Analysis Model.
 Note: The transition cost is the amount of cumulative federal budget transfers required to cover net changes in revenues and expenditures resulting from the introduction of individual accounts.

bond rate (the base case). A 2 percent differential represents a case where returns average 2 percentage points above the bond rate. The 2000 Trustees' Report assumes that the real return on government bonds (the return after deducting inflation) will average 2.9 percent over the next 75 years. A 2 percent differential implies that average returns on individual accounts will be 4.9 percent after inflation.

The administrative alternatives are a higher-cost, decentralized approach and a low-cost, centralized approach. Under the decentralized approach, individuals could select from a wide range of asset managers and annuity providers. The annual asset-management costs under such a plan are assumed to be 1.44 percent of assets under management, the weighted average of administrative charges levied by mutual funds today. The assumed cost of converting account balances into annuities is 10 percent of the account balance, the actual average for joint and survivor annuities today.¹¹

TABLE 1.
Long-Range Deficit as a Percent of Payroll under 2 Percent Individual Account Carve-Out Plan, by Rate of Return, Expenses, and Recapture Rate

Gross Return Differential	Recapture Rate and Management Structure			
	Decentralized		Centralized	
	100%	75%	100%	75%
0	-2.97	-3.18	-2.62	-2.93
2	-2.33	-2.71	-1.65	-2.20
4	-1.14	-1.82	+0.15	-0.80
6	+0.66	-0.12	+1.29	+0.80

Source: Actuarial Research, Inc., Social Security Policy Analysis Model.
 Notes: Long-range deficit spans 75 years. The gross return differential is the percentage return over the government bond rate.

The centralized approach is modeled after the Federal Thrift Savings Plan, under which all account records are maintained by a government agency and workers can select from only a limited number of indexed mutual funds. We assume that such a plan could operate at a cost of 0.15 percent of the assets under management.¹²

The impact of adding administrative costs when the gross return differential is zero and the recapture rate is 100 percent depends on the plan model. Recall that the long-range deficit under the base case averaged 2.59 percent of payroll. Administrative costs under the centralized approach increase the long-range deficit by only 0.03 percent of payroll, from 2.59 to 2.62. Under the decentralized approach, however, administrative costs increase the deficit by about 0.4 percent of payroll.

Reducing the benefit recapture rate from 100 percent to 75 percent has only a minor impact when the gross return differential is zero and the accounts are managed on a centralized basis. The impact rises significantly at higher average return levels, increasing the deficit by almost 1 percentage point when accounts are managed on a centralized basis and returns average 4.0 percentage points above the government bond rate.

Using the projections in table 1, we estimate the size of the average returns that individual accounts must earn to positively affect Social Security finances. The results suggest that centrally managed accounts could have a positive impact if returns averaged 1 percentage point above the government bond rate and the benefit recapture rate were 100 percent. With a more realistic 75 percent recapture rate, the accounts would have to earn a little over 2 percentage points above the government bond rate to avoid increasing the long-range deficit. Under decentralized management and a 100 percent recapture rate, the required differential would be a little over 2 percentage points. At the more realistic 75 percent recapture rate, returns would have to average almost 4 percentage points above the government bond rate.

The results also suggest the kind of returns required to achieve the ambitious goal of entirely eliminating the long-range deficit through a shift to individual accounts. With the 75 percent recapture rate and a centralized management structure, returns would have to average more than 4 percentage points above the bond rate to eliminate the long-range deficit. With decentralized management, they would have to earn about 6 percent above the bond rate.

The average return earned on individual accounts will depend on both the composition of the account portfolios and the average return earned on the portfolios' equity portion. The larger the fraction of the portfolio held in equities and the higher the differential between the average return on equities and the return on bonds, the higher the average return on the portfolio. Table 2 shows the average return on the equity portion of account portfolios required to achieve the deficit benchmarks, assuming a 75 percent recapture rate.

The first set of figures shows the equity returns needed to avoid an increase in the long-range deficit. With centralized management and a 50-50 split between equities and bonds, the portfolio's equity portion must experience real returns averaging 6.9 percent to avoid increasing the long-range deficit. With decentralized account management and a 50-50 split, real equity returns must average 10.9 percent to avoid increasing the deficit. Equity returns need to average 8.6 percent above inflation, even if 70 percent of the portfolio is in equities.

The second set of figures shows the equity returns needed to eliminate the long-range deficit. Under centralized account management and an aggressive portfolio management strategy (70 percent in equities), real returns must average 8.6 percent per year. With decentralized management, real returns would have to average at least 11 percent.

Over the past 75 years, equity returns have averaged about 7 percentage points above the inflation rate. If equities continued to earn similar returns, individual accounts could be introduced

TABLE 2.
Maintaining or Eliminating the Long-Run Deficit: Required Return on Equities, by Account Management Structure (%)

Fraction of portfolios in equities	Avg. Real Return Req'd to Maintain Deficit		Avg. Real Return Req'd to Eliminate Deficit	
	Centralized	Decentralized	Centralized	Decentralized
30.0	9.6	16.2	16.2	22.9
50.0	6.9	10.9	10.9	14.9
70.0	5.8	8.6	8.6	11.5

Source: Actuarial Research, Inc., Social Security Policy Analysis Model.

Note: Results are for an individual account plan assuming a 2 percent carve-out and a 75 percent recapture rate.

without worsening the long-range deficit, as long as the plan used centralized management, recaptured 75 percent of the account balances in benefit reductions, and invested roughly 50-50 in equities and bonds. If 70 percent of the accounts were invested in equities, it would be possible to reduce the long-range deficit modestly.

These results, however, also suggest that if administration is decentralized, it is not possible to introduce individual accounts without increasing the long-range deficit unless future equity returns are substantially higher than past returns or recapture rates are set at 100 percent.¹³

Budget Impact

Even if individual accounts could deliver high enough returns to avoid worsening Social Security's finances, their introduction would require a substantial, if temporary, infusion of general fund revenues to offset the payroll tax revenue loss as account balances build up. Table 3 shows estimates of the amount of additional government debt that would be necessary if the transition costs were financed through treasury borrowing, assuming three different rates of return, centralized management, and a 75 percent recapture rate.

The projection that assumes a 2 percentage point differential comes close to producing the same long-range deficit as that projected under current law. The transition cost associated with this projection produces a debt that peaks at \$6.3 trillion in 2057 (in year 2000 prices) and 29 percent of the country's GDP. The transition debt would be substantially higher if average returns on the accounts were lower, but it would be smaller if returns were higher.

Summary

Financial projections suggest that diverting 2 percentage points of the current Social Security tax into individual accounts is likely to worsen the program's long-range deficit. Avoiding this result would require (1) future equity returns at least equal to those of the past, (2) investment of at least half the account balances in equities, (3) centralized administration and passive investment

TABLE 3.
Transition Debt from Individual Account Plans, by Rates of Return (trillions of 2000\$)

Average Gross Return Differential (%)	Peak Absolute Transition Debt				
	Amount (\$)	Year exp'd	Percent of GDP	Year exp'd	Transition Debt at end of 2074 (\$)
0	16.7	2074	56.2	2074	16.7
2	6.3	2057	29.0	2045	5.5
4	3.9	2037	22.3	2034	-16.1 ^a

Source: Actuarial Research, Inc., Social Security Policy Analysis Model.

Notes: Individual account plan assumes 2 percent carve-out, 75 percent recapture rates, and centralized management structure. Average gross return differential is the percentage return over the government bond rate.

^aSurplus.

policies to assure low administrative costs, and (4) recapturing (i.e., taxing away) at least 75 percent of the account balances at retirement.

If equity returns are lower, accounts are invested less aggressively, accounts are managed on a decentralized basis (with administrative costs equaling the current average for mutual funds), or the recapture rate is less than 75 percent, the deficit will rise. Even if a plan can be introduced that avoids an increase in the long-range deficit, financing the transition costs would require additional government borrowing that peaks at more than \$6 trillion in today's prices, or equivalent reductions in other government spending.

These results suggest that, no matter how attractive the idea may seem, diverting part of the current payroll tax to individual accounts is not likely to be effective in solving Social Security's looming financing problem.

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Endnotes

1. The SSPAM model is a demographically based cell model that simulates the benefits received by 140 representative workers for each cohort. At the time this brief was issued, the Actuarial Research Corporation was updating its model to reflect the 2001 Trustee assumptions and to introduce other technical changes in the estimating methodology. The new assumptions, however, are not expected to have a significant impact on the estimates presented here.
2. The analysis ignores any second-order effects of changes in savings or labor force participation rates as a result of the shift to individual accounts.
3. The CSSS models involved diversions of 2 percent, 2.5 percent; and 4 percent, respectively.
4. The link between administrative costs, worker choice, and political insulation in the design of individual account plans is examined in greater depth in Thompson (1999).
5. The administrative arrangements and the recapture provisions raise important issues that need to be explored carefully before a particular plan is adopted, but are beyond the scope of this brief. The possible impact of the recapture tax on worker investment decisions and the steps that might need to be taken to prevent excessive risk taking are two examples. The implications of decentralized management of the accounts for enforcement of the recapture tax provisions would also need to be examined.
6. Amounts expressed in terms of 2000 dollars have been discounted at an assumed rate of inflation of 3.3 percent.
7. All figures quoted here are based on the intermediate assumptions of the 2000 Trustees' Report. Under the assumptions used in the 2001 Trustees' Report, the projected gap is somewhat smaller, averaging 1.86 percent of taxable payroll.
8. After the individual accounts are phased in, aggregate benefit reductions will continue to exceed aggregate tax

reductions each year because of the assumption that the government bond rate (the rate of return on individual accounts) is substantially higher than the rate of growth of taxable payroll and that the benefit recapture rate is 100 percent.

9. When measured in constant dollars, the cumulative size of the annual deficits peaks before the annual deficits are entirely eliminated, because in the years just before the elimination of the annual deficits, the annual increments are too small to offset the impact of the annual inflation adjustment on the real value of the cumulated total.

10. If the transition costs were financed entirely through general fund borrowing, by 2074 the annual deficit in the Social Security program would be about \$104 billion less in the base case than under present law. However, the annual interest payment on the additional general fund debt would amount to about \$577 billion in that year, more than offsetting the improvement in Social Security finances.

11. The estimate of mutual fund asset management costs is from James et al. (1999); that of annuity costs is from Mitchell et al. (1997). James et al. calculated a "total investor cost ratio" that includes the reported expense ratio, the average brokerage (trading) costs, and annualized front-loaded sales commissions. The figure used here is the average, weighted by the total assets of each mutual fund as of 1997. Actual administrative costs under this kind of decentralized plan would likely be higher, however, since the average transaction under a 2 percent individual account is likely to be much smaller than current industry experience. Mitchell et al. compared the annuity value of different policies to the price charged. The figure used here is from the calculations of joint and survivor annuities at age 65, using the annuitant life table. It falls roughly halfway between the comparison to the 10-year Treasury rate and the comparison to the 30-year Treasury rate.

12. James et al. (1999) estimate a range of possible administrative costs under models like the Thrift Savings Plan (TSP). The 0.15 estimate used here is at the bottom of their range, and is just over twice the current level of TSP administrative costs. Francis Cavanaugh (1998), long-time executive director of the TSP, doubts that the model could be broadened to the population as a whole at a cost anywhere near this level, owing to the much smaller average account size. The model also assumes that the Social Security Administration could generate price-indexed annuities in the form of additions to the regular Social Security benefit at essentially no cost.

13. Conceivably, future returns could be less than historic returns. If so, even this expectation may be too optimistic.

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