Governor Bush's Individual Account Proposal:

A Reassessment Using Realistic Stock Return Projections

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June 2000

Contents

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Executive Summary

This study builds on an analysis of Governor Bush's proposal for individual accounts published earlier this month by the Century Foundation. That analysis examined the impact of the proposal on future retirement income. This study uses the same methodology as that study but changes three assumptions. The most important change is this study uses projections of stock returns that are derived from the projections of profit growth in the Social Security trustees' report. The derivation of these projections is based on a methodology described in earlier work by Dean Baker and by Peter Diamond.

As a result of high current stock valuations and the low projected rate of profit growth in the trustees' report, the real return on stocks in these projections is far below its historic rate, averaging less than 3.6 percent annually. This lower return has a very large impact on the projected income from individual accounts. The accumulation for a worker who has had 35 years to contribute to these accounts will be more than one third less than they would be with the assumed stock returns in the Century Foundation study. With these lower accumulations, all workers would suffer substantial losses in retirement income, as a result of the cuts in the guaranteed portion of the program-- which are likely to be part of Governor Bush's proposal. It is important to note that the projections of stock returns used in this study are the only ones which are actually derived from the growth projections in the trustees' report. The projections used in other analyses are extrapolations from past experience. They do not take into account the trustees projections of profit growth, nor current stock valuations.

This paper also examines the effect of changing two other assumptions in the Century Foundation's study. That study has assumed that the individual accounts would cost just 0.4 percent of assets to administer each year. While this may be a plausible figure for a centralized system with little or no individual control over investment options, Governor Bush has indicated that he wants individuals, not the government, to have control over these accounts. The costs of administering decentralized systems have been shown to be far higher. The study shows that if the costs are 1.0 percent annually, it will reduce the accumulations by approximately 8.0 percent. If the costs are 1.5 percent annually, as has been the case with the privatized British system, then the accumulations will be reduced by approximately 18 percent as compared with the cost projection assumed in the Century Foundation study.

Finally, the Century Foundation study assumed that these accounts could be converted to annuity payments at no cost. If annuitization was mandatory under a centralized system, this might be plausible. However, Governor Bush has indicated that wants individuals to have the option to pass their accumulations on to their heirs. This implies that the individuals who choose to buy annuities will have to pay a considerable premium for them. The evidence suggests that this will reduce the annual income by 10-20 percent as compared to the "no cost" assumption in the Century Foundation study. When the full effect of these three changes is taken into account, the accumulations in the individual accounts are likely to be only about half as large as was estimated in the Century Foundation study. This would mean that virtually everyone would end up with a lower retirement income under Governor Bush's proposal, than they would under the current social security program..

Introduction

The Century Foundation released a study earlier this month by Henry Aaron, Alan Blinder, Alicia Munnell and Peter Orszag (ABMO), which attempted to assess the impact of Governor Bush's individual account proposal on the benefits received by retirees. This study found that the plan implied cuts of 41 percent, on average, against the benefits specified in current law, in the defined benefit portion of the program, if no new revenue is placed into the system. The study found that the income generated by individual accounts should replace roughly half of this shortfall, so that the combination of the guaranteed benefit and the individual account will produce an income stream that is on average 20 percent less than what Social Security would provide under current law.

This study repeats the exercise performed in the ABMO study with one important improvement: it uses projections of stock returns that are derived from the growth projections in the Social Security trustees' report. The projections of stock returns used in this study are taken from Baker (1999). These projections use the methodology for projecting stock returns described in Baker (1997) and Diamond (1999). The returns implied by this methodology are far lower than those assumed in the ABMO study. The reasons for the lower returns are that current price-to-earnings ratios in the stock market are at record highs, and the rate of economic growth projected for the future by the trustees' is approximately half its historic average. As a result, stock returns will be far lower in the future than in the past.

In addition to correcting the assumption on stock returns, this study also examines the impact of changing two of the other assumptions in the earlier study. Specifically, it examines the impact of assuming higher administrative costs for the individual accounts and factoring in the cost of purchasing annuities. The ABMO study assumed that the accounts would be administered centrally at relatively low cost. Governor Bush has often used rhetoric in describing his plan that implies that he intends to have a decentralized system, which would have considerable higher expenses. The ABMO study also assumed that, actuarially, fair annuities could be purchased by workers when they retired. This implies mandatory annuitization through a government run system. Again, Governor Bush has suggested that he would make annuitization optional, allowing individuals to make lump sum withdrawals and pass their accounts onto their heirs. The assumptions on these issues made by the ABMO study were favorable to the Bush Plan. Changing the assumptions to more closely fit his description of the plan will reduce the projected retirement income generated under his proposal.

Stock Return Projections

Proponents of Social Security privatization, as well as advocates of placing the trust fund in the stock market, have routinely assumed that stocks will provide the same return in the future as they have in the past. This assumption can be shown to be logically impossible, given high current stock valuations, and the trustees' low projected growth rates for both the economy and corporate profits. At present, the price-to-earnings ratio for corporate stock

averages just under 28 to 1.[1] This is almost twice its historic average, which has been approximately 14.5 to 1. Proponents of investing in the stock market have consistently refused to incorporate high current stock valuations into their calculations. Similarly, the Social Security trustees' are projecting that the economy and corporate profits (they assume that the profit share of national income remains constant) grow at a real rate of less than 1.7 percent annually over the next seventy-five years. By comparison, it has grown at a rate of more than 3.2 percent on average over the last seventy-five years. Other things being equal, stocks cannot possibly provide the same returns in the future when the economy is only growing at half the rate that it has grown in the past.

The basic logic of these points is straightforward. Suppose one dollar invested in a share of stock today received a 7.0 percent return. Now, suppose that the price of the stock doubled, but everything else stayed exactly the same. Simple logic implies that the return for each dollar invested at the new stock price will be half as much, or 3.5 percent. In a situation where the price-to-earnings ratio for stock is close to double its historic average, the return to holding a share of stock will be close to half its historic average.

The logical link between profit growth and stock returns is equally solid. Historically, the 7.0 real return on stock has been roughly evenly split between 3.5 percent real growth in share prices and 3.5 percent dividend yields.[2] Over the long-term, stock prices can only grow as fast as corporate profits, unless the price-to-earnings ratio continually rises. If stock prices grew at their historic 3.5 percent rate when corporate profits are only rising at a 1.7 percent annual rate, the price-to-earnings ratio would continually rise. After twenty years it would be 40 to 1. In fifty years it would be 67 to 1. And at the end of the projection period in 2075, the price-to-earnings ratio would be 104 to 1.[3] No economist has been willing to claim that such price-to-earnings ratios are plausible.

This analysis therefore rejects the impossible assumption that stocks, in spite of current record price-to-earnings ratios and slow projected growth, will provide the same returns in the future as they have in the past. Instead, it uses a set of projections for stock returns which is based on projections for dividend yields and capital gains that are derived from the Social Security trustees' projections. These projections and their derivation are described in Baker (1999). They are consistent with the methodology described in Diamond (1999). To

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[1] Prior to the plunge in the Nasdaq, the price-to-earnings ratio averaged 30 to 1. The value of corporate equity is obtained from Federal Reserve Board, Flow of Funds Accounts table L.213, line 19. The year-end value ($18,876.6 billion) is adjusted for the changes in the Wilshire 5000 index since the end of 1999. Corporate earning for 1999 were $633.3 billion. This figure is the broadest measure of earnings, after-tax corporate earnings with inventory valuation and capital consumption adjustment (National Income and Product Accounts, table 1.14 line 30).

[2] At present, because of the record high price to earnings ratios, the dividend yield (counting share buybacks) is approximately 2.0 percent.

[3] These numbers actually understate the run-up in the price to earnings ratio that would be needed to maintain the historic rate of stock returns, since the higher price to earnings ratios imply lower dividend yields. This means that stock prices would have to rise even more rapidly to provide the historic 7.0 percent real rate of return.

date, the projections used in this analysis are the only stock projections that have been derived from the projections in the Social Security trustees' report.[4]

TABLE 1

	Dividend Yield	Capital Gain	Total Return
2000-2010	1.6	2.0	3.6
2010-2020	1.9	1.6	3.5
2020-2030	2.0	1.4	3.4
2030-2040	2.0	1.5	3.5
2040-2050	2.0	1.4	3.4
2050-2060	2.0	1.4	3.4
2060-2070	2.0	1.4	3.4
2070-2075	2.0	1.4	3.4

Table 1 shows the decade-long averages for dividend yields, capital gains, and total returns. The average real stock return over this period is projected at slightly less than 3.5 percent above the rate of inflation. This return is only marginally higher than the 3.0 percent real return projected for government bonds, and is below the 4.0 percent real return conventionally assumed for corporate bonds. Given the greater risk associated with stock than these other assets, it is reasonable to believe, as Diamond (1999) and Baker (2000) argue, that stocks are temporarily over-valued, and that price-to-earnings ratios will soon fall back to more normal levels. However, if this is the basis for assuming that stocks will provide their historic rate of returns in the future, it would be necessary to include a large decline in stock prices in return projections. To date, none of the proponents of privatization have gone this route. In fact, it would be irrational to place Social Security money in the stock market if such a large falloff in stock prices were anticipated. Rather, it would make more sense to wait until after the correction had occurred and then go the route of privatization.

It is important to recognize that projections for total stock returns used in this analysis are logical implications of the profit growth projections in the Social Security trustees' report, given the assumption that the price-to-earnings ratio will not rise further (which would imply even lower stock returns at some future point).[5] In this sense they have the same status of an arithmetic truth, such as the proposition that two plus three equals five. To differ with these stock projections, one must either discard the trustees' projections, which provide the basis for the whole debate over Social Security, or argue that price-to-earnings ratios can rise to levels that few, if any, economists consider plausible.

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[4] Proponents of privatization have been repeatedly urged to derive their own projections for stock returns. None of them has yet done so. A record of exchanges on this topic can be found on the website of the Center for Economic and Policy Research (www.cepr.net).

[5] The projections could be altered slightly by changing the mix of debt and equity financing of investment, but this would only affect the timing and composition of returns. It would not increase total returns. It is possible to increase the rate of profit growth by assuming a more rapid increase in the growth rate of foreign investment in developing countries, but it is unlikely that many proponents of Social Security privatization would rest their position on investment in developing countries proceeding at an even more rapid rate than is assumed in these projections.

Projecting Benefits with Consistent Stock Return Projections

In constructing projections for retirement benefits, this study follows ABMO's as closely as possible. That study assumed that disability benefits would not be cut under Governor Bush's program and that workers who are over age 55 in 2002 will not see their benefits affected. With current projections, and if no other revenue is added to the program, these two assumptions imply that it will be necessary to have cuts on average of 41 percent in core benefits for workers who will be under age 55 or under in 2002.[6] The ABMO study assumed that these cuts would be phased-in as the money accumulates in individual accounts, so that they would be spread equally across generations. For simplicity this study uses the same phase-in structure.[7]

The impact of using consistent assumptions for stock returns on the accumulations in the individual accounts is quite dramatic. Table 2 shows the size of individual accounts at retirement, by age cohort, for a single average earner under the ABMO assumptions and the consistent stock return assumptions used in this study.

TABLE 2
Accumulations at Retirement – Single Average Wage Earner (inflation-adjusted 2000 dollars)

Age in 2002	AMBO	Consistent Projections
55	$8,832	$7,857
50	$15,681	$13,148
45	$24,843	$19,586
40	$37,039	$27,384
35	$53,212	$36,763
30	$74,595	$47,976
25	$78,400	$50,290

For older workers, the difference in the rate of return does not have much impact, since the accounts are not accumulating over a long period. But for a worker who is age 40 in 2002, the difference is almost $10,000, more than 25 percent of the account's value. In the case of younger workers, who have the opportunity to accumulate money over an entire 35 year working career, using consistent projections of stock returns will reduce the value of the account by more than one third, compared with the projections used in ABMO.

The difference in accumulations has a large impact on the retirement income that will be generated through these accounts. Table 3 presents the retirement income for the age cohort which will be 30 in 2002, the first one that will have 35 years of contributions to an individual account.

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[6] This figure may actually underestimate the size of the cuts in the old age portion of the program. Governor Bush has said that he wants to protect the survivors' benefit. If the survivors benefit is left intact, this would imply even larger cuts in retirement benefits. However, as a practical matter it would be very difficult to restructure the program with reduced benefits for retirees and unchanged benefits for survivors. For example, if the survivors benefit was left untouched but the retirement benefit was cut as much as was needed to balance the program, it could lead to situations in which a surviving spouse was receiving larger benefits than a retired couple with the same earning history.

[7] If the intention is to spread the cuts, measured as a percent of scheduled benefits, evenly across generations, then the smaller accumulations in this analysis would imply a more rapid phasing of benefit cuts.

TABLE 3
Retirement Income for Thirty-year Old Workers Retiring in 2037 (inflation-adjusted dollars)[8]

	Low Earners		Average Earners		High Earners	
	Single	*Married*	*Single*	*Married*	*Single*	*Married*
Current law Benefit	$9,618	$14,217	$15,877	$23,816	$25,433	$38,150
54% cut in Social Security Benefit	-$5,157	-$7,736	-$8,514	-$12,771	-$13,638	-$20,457
Individual Account	$1,542	$1,619	$3,428	$3,472	$6,658	$6,745
Total Retirement Benefit	$6,003	$8,100	$10,791	$14,517	$18,453	$24,438
Percentage Change in Benefit	-38%	-43%	-32%	-39%	-27%	-36%

Apart from the different projections for stock returns, the calculations in table 3 use the same assumptions as the ABMO study.[9] The implied reductions in retirement income are quite large in each case. As with the ABMO study, the largest percentage reduction occurs for the lowest income workers. This is due to the fact that the Social Security payback structure is very progressive. These workers receive a higher return on their payroll taxes, and therefore the income from the individual account does not come close to offsetting the cut. For each income group, those receiving the married worker benefit would lose considerably more income than single workers.

The largest difference between the projections in table 3 and those in the ABMO study are in the income calculations for high earners. That study showed that under Governor Bush's plan, single high earners only lost 3 percent of the income that is scheduled under the current law benefit. In table 3 they are shown as losing 27 percent of their income. This difference is understandable, since the individual accounts constituted a much larger share of the benefit for high earners. If low stock returns reduce the income provided by these accounts, it will have the greatest impact on high earners.

Administrative Costs

The ABMO study used an assumption from Martin Feldstein, an advisor to Governor Bush, that the individual accounts could be administered at a cost of 0.4 percent of assets annually. This is a plausible estimate of the cost of maintaining a centralized system of individual

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[8] Following ABMO, these calculations assume 35 years of work. The gross return in the ABMO study is 5.9 percent, with 0.4 percentage points deducted for administrative expenses. The same 0.4 percentage points is deducted for administrative expenses in the "consistent projections" column. The gross return is calculated based on a mix of 40 percent corporate bonds, which are assumed to pay 4.0 percent real interest, and 60 percent equities.

[9] There is one important exception. That study assumed that the second earner in a couple receiving the married worker benefit had no work history. This situation is likely to be very rare. If a couple receives the married worker benefit, it implies that the lower earning spouse earned benefits that are less than half of those earned by the higher earning spouse. This means that the extremes for the lower earning spouse are that their benefits would be either zero or half of the higher earning spouse's benefit. This analysis assumes that the lower earning spouse, among those receiving the married worker benefit, on average has earned a benefit that is one quarter of the benefit received by the higher earning spouse. Since Social Security has a very progressive payback structure, this implies considerably less than one quarter of the higher earning spouse's wages. The assumed ratio of the wages of the low earning spouse to the high earning spouse for the low, average, and high earners is 14.8 percent, 11.0 percent, and 9.0 percent, respectively.

accounts. Under such a system, all accounts would be managed by a single entity, and individuals would have little or no choice over how it is invested.[10] Governor Bush has indicated that he would not want the government investing people's money and that individuals should have a choice as to how their money is invested.[11] This suggests that Governor Bush would be inclined to install a decentralized system comparable to the ones that exist in Chile and Britain. These systems have considerably higher administrative expenses. The expenses are likely to be even higher if individuals have significant choice over the mix of assets, instead of being forced to choose from a limited number of indexed funds. In Chile, the annual administrative costs have been more than 1.0 percent of the assets in the system (Mitchell, 1998). In Britain, the expenses have been even higher (Murthi, Orszag, and Orszag, 1999).

If Governor Bush puts in place a system of accounts that is not centrally-administered and allows individuals significant choice among their investments, the administrative costs will be far higher than the 0.4 percent assumed in the ABMO study. It is reasonable to believe that the annual costs will be at least 1.0 percent of assets with such a system, and possibly as much as 1.5 percent. Higher administrative costs effectively reduce the annual rate of return by this amount, and will lead to lower accumulations. Table 4 shows the retirement income that cohort, who will be age 30 in 2002, will receive under Governor Bush's plan, if the administrative costs are higher than is projected in the ABMO study. If the administrative costs turn out to be closer to 1.0 percent annually, as is assumed in the "moderate cost" scenario, it will reduce the total accumulation in the individual account by approximately 10.8 percent. Annual administrative costs of 1.5 percent would reduce the accumulation in the account by an additional 8.0 percent. The expenses in the moderate cost scenario imply a cut of an additional 2 percentage points of the benefit provided in current law. The expenses in the high cost scenario would imply a cut of 4.0 percent percentage points measured against the low cost scenario.

TABLE 4
The Impact of Administrative Costs on Retirement Income Average Earners (Age 30 in 2000),
Retiring in 2037 (inflation-adjusted 2000 dollars)

	Low Earners		Average Earners		High Earners	
	Single	*Married*	*Single*	*Married*	*Single*	*Married*
Current law Benefit	$15,877	$23,816	$15,877	$23,816	$15,877	$23,816
54% cut in Social Security Benefit	-$8,514	-$12,771	-$8,514	-$12,771	-$8,514	-$12,771
Individual Account	$3,428	$3,472	$3,059	$3,153	$2,782	$2,865
Total Retirement Benefit	$10,791	$14,517	$10,422	$14,198	$10,145	$13,910
Percentage Change in Benefit	-32%	-39%	-34%	-40%	-36%	-42%

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[10] In the plan put forward last year by Representatives Bill Archer and Clay Shaw, which was modeled on the Feldstein proposal, all accounts would be invested in exactly the same mix of bond and stock index funds. The individual maintained no control over the investments in his or her account.

[11] A single centralized system does not imply that the government is directly investing the money; this work could be contracted out. However, this is basically the same situation that would exist if the government opted to invest the trust fund directly in stocks, corporate bonds, and other private assets.

Annuities

Another factor that will have an important impact on the retirement income that workers can expect to derive from their individual accounts is the way in which annuities are treated. The current defined benefit under Social Security is an inflation-indexed annuity -- the monthly benefit continues throughout the worker's lifetime. Its purchasing power is protected against the effect of inflation by annual cost-of-living adjustments. It is reasonable to assume that many or most workers would like to have their individual accounts paid out as an annuity. This avoids the possibility that the worker could outlive his account, if he or she spends it down at a fixed rate. This concern is likely to be especially important with the Social Security benefit, since this is the worker's core retirement income.

Inflation-indexed annuities are difficult to obtain in the private market. Even non-indexed annuities often charge administrative expenses that reduce the value of the benefit by as much as 15-20 percent (Poterba and Warshawsky, 1999). ABMO assumed that the accumulations in the individual accounts could be converted into an annuity at no cost. This would be plausible if there were a centrally-managed system with required annuitization, so that it would be a relatively simple matter to convert a worker's assets into a monthly benefit at the point at which he or she retired. However, Governor Bush has said that he wants individuals to have the option to pass their accounts on to their children, which means that he does not envision a system with mandatory annuitization. This means that an accurate assessment of his proposal must include some accounting of the costs of annuitization for those individuals who choose to receive their benefits in this manner.[12]

TABLE 5
The Impact of Purchasing Annuities on Retirement Income. Average Earners (Age 30 in 2000), Retiring in 2037 (inflation-adjusted 2000 dollar)

	Low Earners		Average Earners		High Earners	
	Single	*Married*	*Single*	*Married*	*Single*	*Married*
Current law Benefit	$15,877	$23,816	$15,877	$23,816	$15,877	$23,816
54% cut in Social Security Benefit	-$8,514	-$12,771	-$8,514	-$12,771	-$8,514	-$12,771
Individual Account	$3,428	$3,472	$3,085	$3,125	$2,742	$2,778
Total Retirement Benefit	$10,791	$14,517	$10,448	$14,170	$10,105	$13,827
Percentage Change in Benefit	-32%	-39%	-34%	-41%	-36%	-42%

Table 5 shows the impact that the costs of annuities will have on the retirement income of an average earner who is thirty in the year 2002. The "no cost" scenario follows ABMO in assuming that annuities can be obtained costlessly upon retirement. The "moderate cost" scenario assumes that the annuity costs an amount equal to 10 percent of the accumulation in the individual account. The "high cost" scenario assumes that the annuities will cost on

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[12] The mandatory annuitization in the existing Social Security does to some extent redistribute from the short-lived to the long-lived. However, it does not follow that the short-lived will necessarily gain from privatization. As noted before, the Social Security payback structure is very progressive, so insofar as low income and shorter life expectancies go together, shorter-lived individuals will disproportionately benefit from the current system. Furthermore, disability and survivor benefits make the system even more progressive. Finally, it is important to recognize that many of the poorest people die in debt. This means that if these people had accumulated some assets in a retirement account, the benefits could go to a credit card company, not to the worker's heirs.

average 20 percent of the account's value. The cost of annuities in the "moderate cost" and "high cost" scenarios reduces retirement income measured as a share of current law benefits by 2 and 4 percentage points, respectively. It is worth noting that this table is constructed using the low administrative cost scenario in table 4. If the moderate or high administrative cost assumptions were applied it would lead to a further reduction in retirement income.

Assessing Governor Bush's Plan

This analysis has applied a series of alternative assumptions in assessing the impact of the Social Security proposal put forward by Governor Bush. The most important of these was the use of assumptions on stock returns, which are consistent with the other projections in the Social Security trustees' report. The stock return projections used in this analysis are the only projections that have actually been derived from the profit growth projections in the trustees' report. All other projections have simply specified an arbitrary rate of return without examining whether this rate of return was consistent with current stock valuations and the growth projections in the trustees' report. The analysis showed applying these stock projections significantly reduced the amount that workers can expect to accumulate in the individual accounts proposed by Governor Bush.

There are still many unanswered questions about the mechanics of the accounts in Governor Bush's proposal. This analysis shows that if the accounts are administered in a decentralized manner, as Governor Bush has suggested, the administrative costs could reduce the size of the accumulations by between 10-20 percent, compared with a centrally-managed system. Similarly, if annuitization of these accounts is voluntary, this could reduce the size of the benefits available to those who buy annuities by another 10-20 percent. In short, Governor Bush's proposal may lead to very substantial reductions in the retirement income compared to the benefits that are scheduled under current law.

This analysis follows the framework used by ABMO. This was done to facilitate comparisons between the set of assumptions used in that analysis and the assumptions used in this analysis. However, in many ways the framework in that study provides a poor basis for assessing changes to the program. That analysis assumes (a) that no new revenues will ever be made available to the program, and (b) some unusually pessimistic projections for productivity growth. The default position is one in which large cuts to the program are already implicit.

In fact, there is little basis for believing that this is the situation that the program faces. Current projections show that the program can pay all scheduled benefits through the year 2037, even if no changes are ever made. These projections assume that the economy grows at approximately half its historic rate. Even more noteworthy than the overall growth assumptions, the projections assume that real wages will grow at half the rate that the World Bank has assumed wages will grow in the rest of the OECD in its analysis of Social Security systems (World Bank 1994, page 160). This assumption implies that the United States will rank among the poorest of the nations that are currently industrialized.

Even with these pessimistic growth assumptions, the amount of additional revenue that is needed to make the system fully solvent over the next seventy-five years is less than 1.0 percent of national income over the whole period. This is a much smaller commitment,

measured as a share of GDP, than the military build-up of the Carter-Reagan years. It is dwarfed by such expenses as the expansion of the military at the start of the Cold War. A nation that will be more than 30 percent richer than it is today, even with very pessimistic growth assumptions, can surely afford the additional revenue that the Social Security program may require at some future point.

Regarding the politics of raising taxes to support Social Security, it is worth noting that the program ran short of money in the decade of the fifties, the sixties, the seventies, and the eighties. In each case, Congress voted for the additional revenue needed to sustain the program. While tax increases are never going to be popular, it strains credulity to believe that the voting public in twenty or thirty years, of which more than a third will be Social Security beneficiaries, will not support the taxes needed to sustain the program's benefits. To imply otherwise is unnecessarily scaring generations of workers about the security of their retirement.

In the context of the current debate over Social Security, there is a tendency to discuss budgets as though we are literally charting out revenue and expenditures for the next thirty or forty years. After the fall election, there will be nine more presidential elections and 18 more congressional elections before the Social Security system is projected to run short of money. In each of these elections, candidates will be putting forward their tax and spending agendas. The one issue on which there can be a considerable degree of certainty is that these candidates will care little about the decisions made in the year 2000. They will adopt tax and spending proposals that make sense at the time.

While it is not necessary, or possible, to determine how the nation's commitment to Social Security will be met for all future time, what can be decided in this election is the nature of that commitment. If the size of the guaranteed benefit is substantially reduced, as seems likely under Governor Bush's proposal, there is less reason to believe that Social Security (including the newly created individual accounts) will provide a less adequate and secure income to future generations of retirees than it does at present.

Social Security has been one of the great success stories of the 20th century, providing the bulk of our elderly population with a core retirement income. It should also be one of the great success stories of the 21st century. However, the best way to ensure its survival is to be honest about the efficiency, effectiveness, and the financial soundness of the program.

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Appendix

The returns assumed for equities shown in Table 1 of the text are derived in Baker, 1999. The returns to holding individual accounts shown in Table 2 are calculated assuming a mix of 60 percent equities and 40 percent corporate bonds. Corporate bonds are assumed to provide a 4.0 percent real rate of return. The administrative cost, following ABMO, is assumed to be 0.4 percent annually. The contributions are assumed to be 2.0 percent of wages. The wages for the low, middle, high earners are taken from Social Security Administration, 2000. The current law benefits and the size of the projected cut in benefits in table 3 are both taken directly from ABMO. The value of the holdings in individual accounts was calculated as described for Table 2. The low, moderate, and high cost scenarios in Table 4 assume 0.4, 1.0, and 1.5 percent annual administrative costs, respectively. The moderate and high cost scenarios in Table 5 assume that annuities cost 10 and 20 percent of the money accumulated in individual accounts, respectively.

Appendix Table 1 uses the cut in the defined benefit by age cohort assumed by ABMO. It calculates the size of the annuity income for each age cohort by first calculating the accumulation in individual accounts, as described above. It assumes that administrative costs are 0.4 percent. The first year in which accumulations occur is assumed to be 2002, so the age cohort turning 65 in 2012 will have 10 years of accumulation. The size of the annuity was adjusted by taking the ratio of projected life expectancy in the specific year to the ratio projected for 2037 (Social Security Administration, 2000). This ratio was then multiplied by the estimate that appears in ABMO (p8 fn), that in 2037, $100 will purchase a $7.19 annuity for a single individual and a $6.68 annuity for a couple.

Appendix Table 2A is constructed in an identical manner to Table 1, except it assumed annual administrative costs of 1.0 percent. Appendix Table 2B assumes annual administrative costs of 1.5 percent.

Table 1
Average Cut in Benefits as a Fraction of Current Law Benefit, by Age in 2002

	Low Income		Middle Income		High Income	
	Single	*Married*	*Single*	*Married*	*Single*	*Married*
55	-25%	-25%	-25%	-25%	-25%	-25%
50	-29%	-29%	-29%	-29%	-29%	-29%
45	-33%	-33%	-33%	-33%	-33%	-33%
40	-39%	-39%	-39%	-39%	-39%	-39%
35	-46%	-46%	-46%	-46%	-46%	-46%
30	-54%	-54%	-54%	-54%	-54%	-54%
25	-54%	-54%	-54%	-54%	-54%	-54%

Average Annuity From Individual Account as a Fraction of Current Law Benefit, by Age in 2002

	Low Income		Middle Income		High Income	
	Single	*Married*	*Single*	*Married*	*Single*	*Married*
55	3%	2%	4%	3%	5%	4%
50	5%	4%	7%	5%	9%	6%
45	8%	5%	10%	7%	12%	8%
40	10%	7%	14%	9%	17%	11%
35	13%	9%	17%	12%	21%	14%
30	16%	11%	22%	15%	26%	18%
25	16%	11%	21%	14%	26%	17%

Net Change in Retirement Benefit as a Fraction of Current Law Benefit, by Age in 2002

	Low Income		Middle Income		High Income	
	Single	*Married*	*Single*	*Married*	*Single*	*Married*
55	-22%	-23%	-21%	-22%	-20%	-21%
50	-24%	-25%	-22%	-24%	-20%	-23%
45	-25%	-28%	-23%	-26%	-21%	-25%
40	-29%	-32%	-25%	-30%	-22%	-28%
35	-33%	-37%	-29%	-34%	-25%	-32%
30	-38%	-43%	-32%	-39%	-28%	-36%
25	-38%	-43%	-33%	-40%	-28%	-37%

Source: ABMO 2000 and author's calculations (see appendix)

Table 2A- Intermediate Administrative Costs

Average Cut in Benefits as a Fraction of Current Law Benefit, by Age in 2002

	Low Income		Middle Income		High Income	
	Single	*Married*	*Single*	*Married*	*Single*	*Married*
55	-25%	-25%	-25%	-25%	-25%	-25%
50	-29%	-29%	-29%	-29%	-29%	-29%
45	-33%	-33%	-33%	-33%	-33%	-33%
40	-39%	-39%	-39%	-39%	-39%	-39%
35	-46%	-46%	-46%	-46%	-46%	-46%
30	-54%	-54%	-54%	-54%	-54%	-54%
25	-54%	-54%	-54%	-54%	-54%	-54%

Average Annuity From Individual Account as a Fraction of Current Law Benefit, by Age in 2002

	Low Income		Middle Income		High Income	
	Single	*Married*	*Single*	*Married*	*Single*	*Married*
55	3%	2%	4%	3%	5%	4%
50	5%	4%	7%	5%	8%	6%
45	7%	5%	9%	7%	12%	8%
40	9%	7%	13%	9%	15%	10%
35	12%	8%	16%	11%	19%	13%
30	14%	10%	19%	13%	23%	16%
25	14%	10%	19%	13%	23%	16%

Net Change in Retirement Benefit as a Fraction of Current Law Benefit, by Age in 2002

	Low Income		Middle Income		High Income	
	Single	*Married*	*Single*	*Married*	*Single*	*Married*
55	-22%	-23%	-21%	-22%	-20%	-21%
50	-24%	-25%	-22%	-24%	-21%	-23%
45	-26%	-28%	-24%	-26%	-22%	-25%
40	-30%	-32%	-26%	-30%	-24%	-29%
35	-34%	-38%	-30%	-35%	-27%	-33%
30	-40%	-44%	-35%	-41%	-31%	-38%
25	-40%	-44%	-35%	-41%	-31%	-38%

Source: ABMO 2000 and author's calculations (see appendix)

Table 2B- High Administrative Expenses

Average Cut in Benefits as a Fraction of Current Law Benefit, by Age in 2002

	Low Income		Middle Income		High Income	
	Single	*Married*	*Single*	*Married*	*Single*	*Married*
55	-25%	-25%	-25%	-25%	-25%	-25%
50	-29%	-29%	-29%	-29%	-29%	-29%
45	-33%	-33%	-33%	-33%	-33%	-33%
40	-39%	-39%	-39%	-39%	-39%	-39%
35	-46%	-46%	-46%	-46%	-46%	-46%
30	-54%	-54%	-54%	-54%	-54%	-54%
25	-54%	-54%	-54%	-54%	-54%	-54%

Average Annuity From Individual Account as a Fraction of Current Law Benefit, by Age in 2002

	Low Income		Middle Income		High Income	
	Single	*Married*	*Single*	*Married*	*Single*	*Married*
55	3%	2%	4%	3%	5%	3%
50	5%	3%	6%	4%	8%	5%
45	7%	5%	9%	6%	11%	7%
40	9%	6%	12%	8%	14%	10%
35	11%	8%	15%	10%	18%	12%
30	13%	9%	18%	12%	21%	14%
25	13%	9%	17%	12%	21%	14%

Net Change in Retirement Benefit as a Fraction of Current Law Benefit, by Age in 2002

	Low Income		Middle Income		High Income	
	Single	*Married*	*Single*	*Married*	*Single*	*Married*
55	-22%	-23%	-21%	-22%	-20%	-22%
50	-24%	-26%	-23%	-25%	-21%	-24%
45	-26%	-28%	-24%	-27%	-22%	-26%
40	-30%	-33%	-27%	-31%	-25%	-29%
35	-35%	-38%	-31%	-36%	-28%	-34%
30	-41%	-45%	-36%	-42%	-33%	-40%
25	-41%	-45%	-37%	-42%	-33%	-40%

Source: ABMO 2000 and author's calculations (see appendix)