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Introduction

As President Bush continues to push for Social Security privatization, many new issues are surfacing, adding to the already substantial list of costs and risks of privatization. Under privatization, workers would be allowed to divert a large share of the money that currently goes to Social Security into private accounts. The risks of saving for retirement would be privatized. This includes the chance that financial markets will underperform for long periods of time, which is known as market risk. A worker's birth date could determine the size of his or her retirement account. The difference from worker to worker could vary widely. This could result in generations of workers with less money than they thought they would have for retirement and considerably less than they would have under the current Social Security system. Given few alternatives, future governments will be compelled to come to the aid of workers who have saved too little for retirement. Reasonable estimates show that this could add between \$600 billion and \$900 billion in present value terms to the costs of privatization over the next 75 years.

Considering historical data and reasonable forecasts for the future, this analysis highlights the following points about market risk under Social Security privatization:

- Market risk is severe. Depending on a worker's birth date, the retirement benefits generated from putting 10 percent of earnings in a private account for 35 years would have ranged from 100 percent to less than 20 percent relative to pre-retirement earnings.
- The extraordinarily high retirement income generated from the booming '90s stock market was the equivalent of winning the generational lottery – unlikely to be repeated regularly. Even under these beneficial circumstances, a privatized system favored by President Bush could have cost the government more than \$1 trillion in today's dollars over the past three decades in a government bailout of the Social Security system to assist those who accumulated too little for retirement.
- The primary alternative to a government bailout of the Social Security system, older workers working longer, would create enormous labor market pressures. Without changes in wages, the unemployment rate could have approached 13 percent in the past 30 years if older workers had wanted to work longer to compensate for having too few retirement benefits.

- Projecting past trends into the future, it is likely that the government will face additional costs to bail out a privatized Social Security system that provides too few benefits. The present value of these additional costs will average between \$600 billion and \$900 billion over the next 75 years and could exceed \$1 trillion.

These numbers show that privatization amounts to a retirement savings gamble, where the winnings are unevenly distributed. Some generations will do poorly, while others could do fine. This asymmetry is also reflected in the government's finances. The government would face the costs if the privatization gamble fails, while it would see few benefits in the years when the privatization gamble's payout is larger than expected.

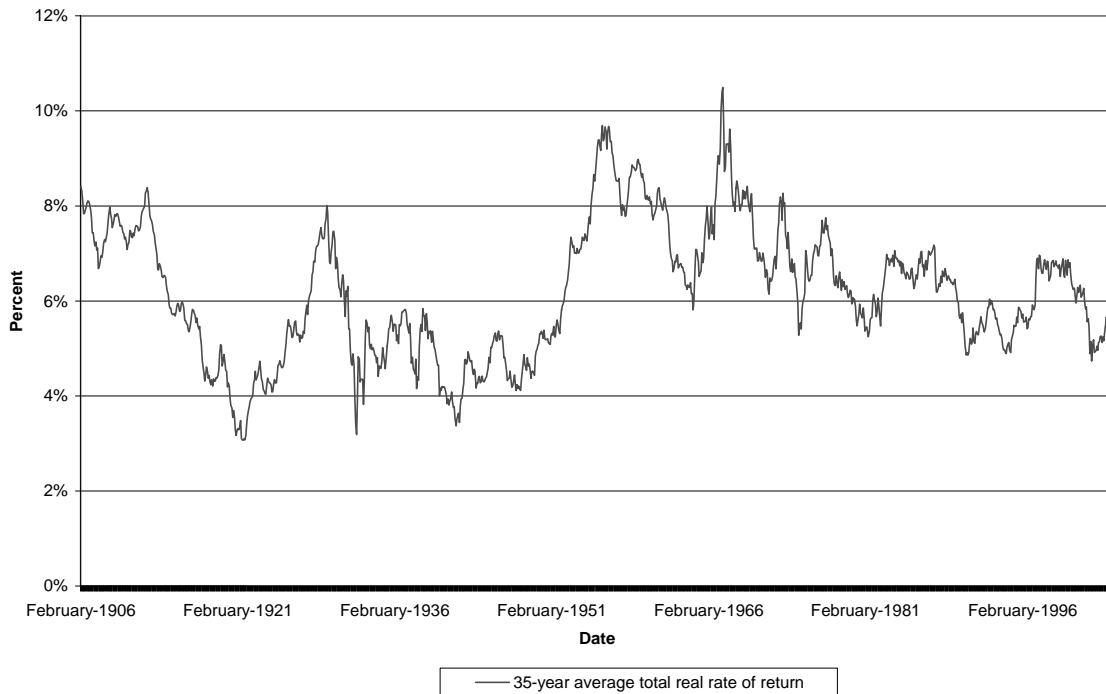
Market Risks Create Substantial Chance of Too Few Savings

With private accounts, workers face risks that are not part of Social Security (Weller and Wenger, 2004a). An important risk here is the risk that financial markets could stay below their historical averages for long periods of time, which is known as market risk. Although it is theoretically possible to reduce market risk by buying insurance that guarantees a specified rate of return, workers would have to spend large shares of their annual savings on this insurance to see a meaningful rate of return (Lachance and Mitchell, 2003).

When considering stock market fluctuations over time, the average rate of return over a typical working life, approximately 35 years, matters.¹ While the real rate of return of the stock market has averaged 6.6 percent over the past 100 years, its average rate of return over 35-year periods has fluctuated between 3 percent and 10 percent (figure 1). That is, market risk is real because workers can experience long periods of underperforming financial markets while they are saving for retirement.

¹ All stock prices are based on the S&P 500, and inflation is based on the CPI.

Figure 1: 35-year Average Total Real Rate of Return



Sources: Shiller (2001), TradeTools.com (2004), and author's calculations.

What does this mean for retirement savings? Private account savings depend on workers' earnings, their savings rates, and financial market returns.² To illustrate how long-term stock market fluctuations can affect people's retirement income, consider what would have happened if everybody had saved 10 percent of their earnings. For illustrative purposes, these contributions are invested in a balanced portfolio, half stocks and half corporate bonds. This also reflects the limits a privatized Social Security system would place on investment choices (CSSS, 2001; Diamond and Orszag, 2002). It is also very close to the proposal roughly sketched out by President Bush in his State of the Union address on February 2, 2005.³ Additional contributions are credited to the account at the end of each year. Each year, workers are charged an administrative cost of 0.7 percent of assets.⁴ When workers retire, their savings are converted into inflation adjusted lifetime

² This analysis differs from Burtless (1999). Where he used constant age earnings profiles and longevity assumptions, actual values are used here. Burtless' (1999) interest was in highlighting solely market risk, while the focus here is on the effects of market risk on public finance. Due to lack of available data, the starting point here is 1939 compared to 1870 for Burtless (1999).

³ In this address, President Bush argued that his proposal would address market risk, essentially by requiring people to get out of the market a number of years before retirement. This can protect people from a bursting stock market bubble just before retirement, but it cannot protect them from a prolonged bear market, which is the primary cause of retirement income fluctuations in the following calculations.

⁴ The low cost assumption of the CSSS was 0.3 percent of assets, whereas market based costs are at or above 1 percent (GAO, 2004; Goolsbee, 2004). Experience in U.S. financial markets and with other countries' privatization efforts suggests that administrative costs will be substantially higher than the low cost estimate of 0.3 percent (Favreault et al., 2004).

annuities, based on the real bond rate at the time of retirement.⁵ At that time, workers are charged 5 percent of their account for converting their savings into annuities (Poterba and Warshawsky, 2000).

Under these parameters, workers could expect to have enough savings after 35 years to enjoy an inflation adjusted benefit equal to 43 percent of their last pre-retirement earnings, as long as costs are excluded. This assumes a nominal average rate of return of a balanced portfolio of 7.8 percent, which is equal to the historical average over the period from 1939 to 2004. When costs are included, workers could expect to have an inflation adjusted retirement benefit equal to 36 percent of their last earnings.

Complete economic data are available starting in 1939. In this example, the first generation to leave the workforce after 35 years would have retired in 1974 at age 65.⁶ On average, retirees in 1974 would have received an inflation adjusted benefit that would have been less than 20 percent of their last earnings – a far cry from what they could have reasonably expected (figure 2).⁷ If retirees had to live solely on the savings in their retirement accounts, they would have experienced a pay cut of 80 percent upon retirement. In comparison, though, the expected retirement income for workers retiring in the late 1990s would have been over 100 percent of their last earnings, i.e., they would have seen a raise upon retirement.

Privatization proposals call for part of the payroll tax to go into private accounts. The rest would continue to support Social Security benefits, albeit at lower levels. Many analyses consider option II of President Bush's Commission to Strengthen Social Security (CSSS) as the sample plan most likely to mirror the president's proposal (CSSS, 2001; Diamond and Orszag, 2002; Goolsbee, 2004; GAO, 2004; CBO, 2004). Under this plan, workers could invest 4 percent of payroll in private accounts up to \$1,000 per year and 2 percent thereafter. The contribution is voluntary, but it is subsidized,⁸ making it likely that everybody would invest (Diamond and Orszag, 2002). Also, benefits for new retirees would grow only at the rate of inflation and no longer at the rate of wage increases. Thus, the living standard that Social Security benefits would afford workers would be frozen at the level of the year the privatization begins. Further, Social Security benefits are reduced by the amount contributed to the private account and assessed with a real interest rate of 2 percent per year. Thus, workers would receive a loan from Social

⁵ This overstates the annuity amounts as the annuity interest rate is typically smaller than the bond rate.

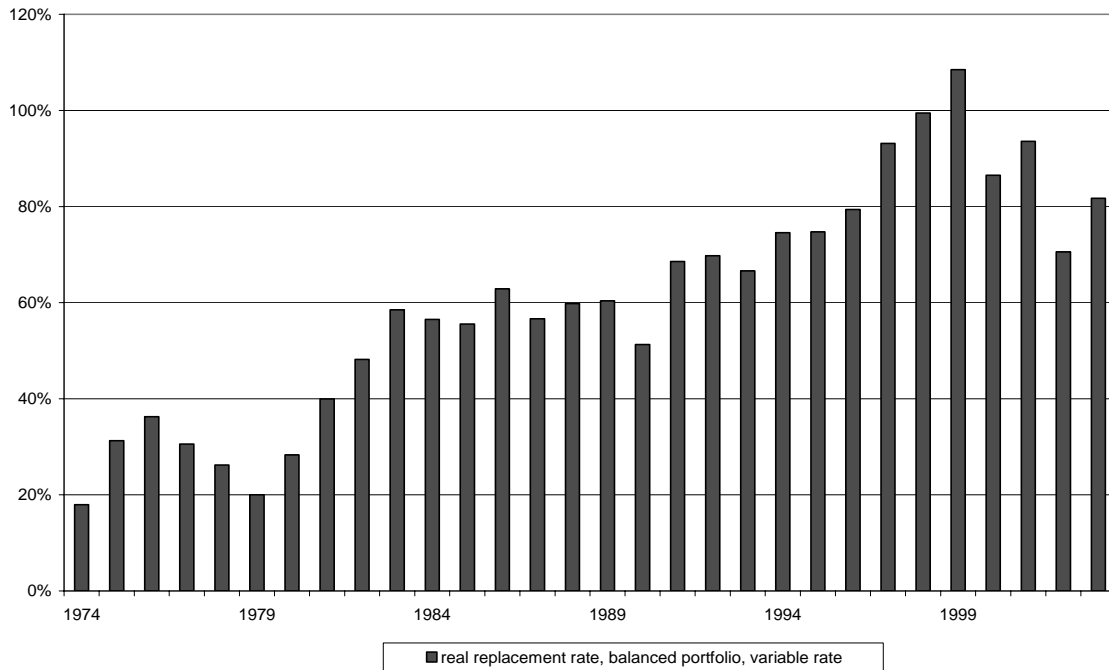
⁶ Earnings are average hourly earnings in the manufacturing sector (BLS, 2004).

⁷ The variations result from differences in average stock market rates of return, interest rates and wage growth. Importantly, it matters whether these trends move together over time and when changes occur in a worker's career. See Weller and Wenger (2004b) for a more detailed discussion.

⁸ This subsidy is rather complex. As employees contribute to private account, a shadow "liability account" is established. This "liability account" is credited with the same amount that is contributed to the private account. Each year, the liability account increases by an interest rate that is 2 percent above inflation. Upon retirement, the savings in the private account are offset by the liability account balance. In essence, employees receive a loan from Social Security to invest in their private account and this loan is due with interest when they retire. The interest rate on this loan is 2 percent above the inflation rate. As long as earnings in the private account are higher than 2 percent plus inflation, employees will actually have some additional savings. Because the interest rate on the "loan" is lower than the average long-term rate for bonds, employees could expect to generate even some additional savings without investing in stock.

Security for the money they contribute to their private accounts, which they would have to repay upon retiring (Diamond and Orszag, 2002). Finally, option II includes a minimum benefit of 120 percent of poverty (inflation indexed) to a 30-year minimum wage worker (Favreault et al., 2004).

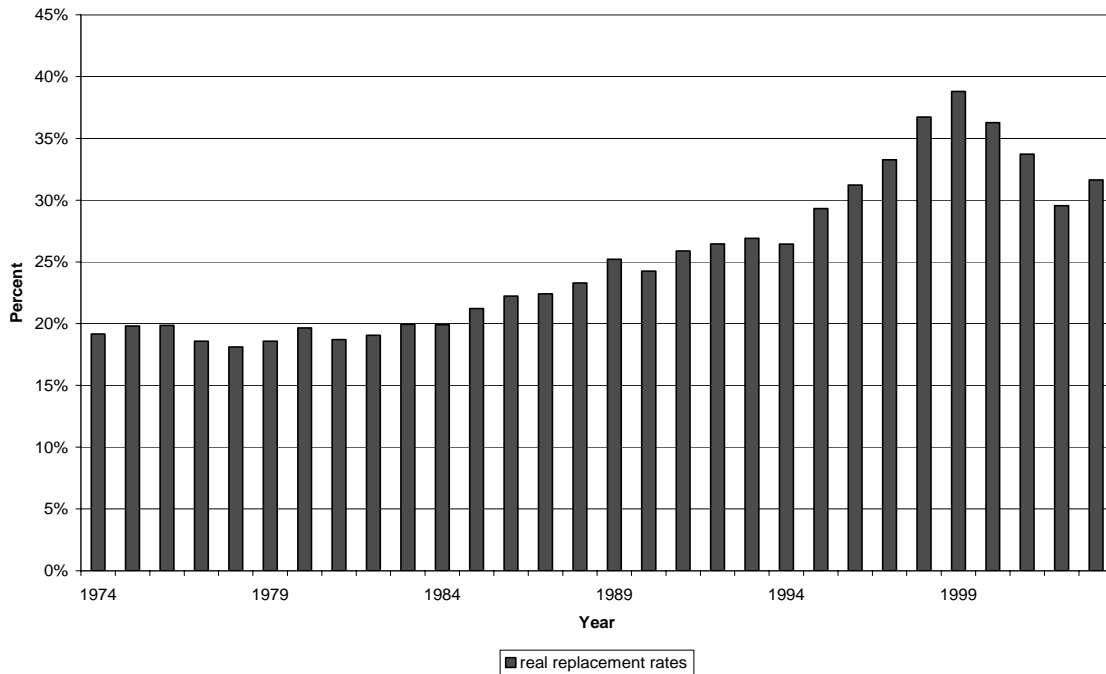
Figure 2: Real Replacement Rate after 35-Years



If this plan had been in place since 1940, when Social Security began paying benefits, and if we start with a replacement rate of 42.5 percent – equal to Social Security’s replacement rate of average earnings in 2004 (SSA, 2004) – the ultimate replacement rates would have ranged from 18 percent in 1978 to 39 percent in 1999 (figure 3). Each year, this system would have paid fewer benefits than Social Security currently does, reflecting the severe benefit cuts included in privatization (CBO, 2004).⁹

⁹ The results depend on a number of assumptions. To show the sensitivity of the results, they can be recalculated using different assumptions about administrative costs and annuitization fees. The administrative costs used here, 0.7 percent, reflect the average between low cost estimates, 0.3 percent, and the current much higher costs in the private market, 1.0 percent. Also, annuitization fees range from 0.4 percent to 0.6 percent, again with the average of 0.5 percent used here. With lower administrative costs, the replacement rate in our first example averages 65.6 percent compared to 60.2 percent with administrative costs of 0.7 percent and 56.5 percent with administrative costs equal to 1.0 percent of assets. Also, higher annuitization costs result in fewer benefits. In the first example, the average replacement rate would have ranged from 59.6 percent to 60.9 percent and in the second example from 25.0 percent to 25.4 percent, depending on the costs of turning savings into lifetime annuities.

Figure 3: Real Replacement Rates after 35 Years, CSSS Option II



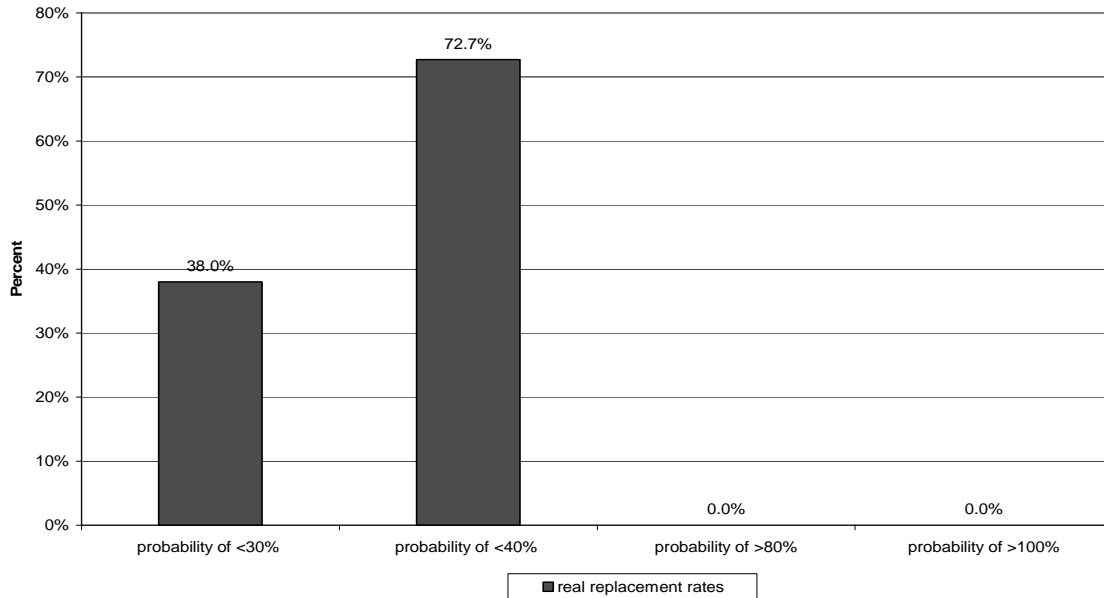
Interestingly, the experience of the past few years was significantly better than what should typically be expected based on historic trends. That is, the lower replacement rates of the previous examples are more likely outcomes than the higher replacement rates. This is particularly important when going forward into an uncertain future with a privatized Social Security system.

To calculate the distribution of replacement rates that retirees could expect under the two scenarios discussed here, 1,000 hypothetical scenarios are created. In each case, earnings, interest rates and stock market rates of return are created randomly for 35 years.¹⁰ Then, the two scenarios are considered. All assumptions are kept in place. To make the results comparable to the previous results, the average life expectancy at age 65 is held constant at 16.4 years. Also, a constant inflation rate of 4 percent is assumed.

¹⁰ Average nominal earnings growth is 5.4 percent with a standard deviation of 3.9 percent, average stock market rate of return is 10.8 percent with a standard deviation of 16.8 percent, and the average interest rate is 6.2 percent with a standard deviation of 3.0 percent. Rates cannot deviate more than one standard deviation from the average. In each instance, five year averages are used.

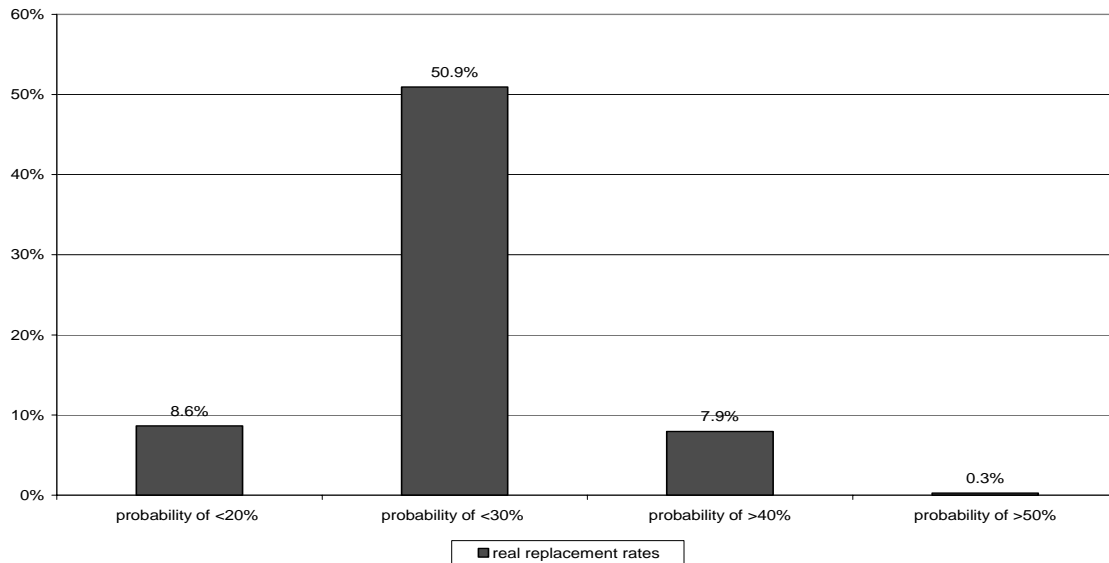
After investing 10 percent of earnings for 35 years, the chance of ending up with a replacement rate of less than 30 percent is about 38 percent (figure 4). Also, more than 70 percent of the time, workers will end up with less than 40 percent. Further, the chance of receiving a replacement rate of more than 80 percent or even a 100 percent is essentially zero. Thus, the past few years were an outlier by historical standards, fuelled by a large run-up in the stock market, below average real wage growth, and above average real interest rates. As a result, less pre-retirement income had to be replaced, but more retirement savings were available and it would have bought larger annuities than before.

Figure 4: Probability of Specific Replacement Rates in 2038, 10 Percent of Earnings Invested



Similar calculations can be made for CSSS' option II (figure 5). Under these hypothetical examples based on historical chances, the possibility of having a replacement rate of less than 20 percent has a 9 percent chance and the possibility of having a replacement rate of less than 30 percent is slightly greater than 50 percent. In comparison, the probability of having a replacement rate of more than 40 percent of pre-retirement income is only 8 percent. In other words, the past few years represented extraordinary circumstances. Had this system been in place since the 1930s, the workers who would have retired with it in the late 1990s would have won the generational lottery.

Figure 5: Probabilities of Specific Replacement Rates, CSSS' Option II, 2038



Large Fiscal Burdens Arise When the Market Underperforms

When workers end up with substantially less retirement income than expected, it is a result of underperforming markets and not of unwise individual investment decisions. Also, entire generations and not just a few individuals would end up with too little savings when the market underperforms. The problem of too little retirement income would thus become too large for the government to ignore. The most likely response would be a government bailout, which could come in different forms, e.g. by instituting new social programs to support the elderly or by direct fiscal transfers to a privatized Social Security. As discussed further below, other alternatives are economically not viable.

Historical experience seems to suggest that when Social Security shortfalls become too large, the U.S. government will step in to bail out the system. In the 1980s, when the savings and loan crisis caused significant economic problems, the U.S. government stepped in to bail out the industry at a cost to taxpayers of over \$120 billion.

It's also worth noting that when the British pension system was partially privatized under the Thatcher government, large holes in pension adequacy became apparent two decades later and gave rise to public support programs and fears of future government bailouts (Cohen, 2005; Davis, 2004; IPPR, 2002). This is of particular significance to the U.S. since the British system was one of the earliest experiments with Social Security privatization in industrialized economies, and because the reduction in the guaranteed benefit portion of CSSS' option II is modeled on the changes introduced in Britain in connection with its privatization.

To calculate the costs of a bailout, a minimum level of retirement income needs to be established. A reasonable threshold for the privatized Social Security system would be the replacement rate for average workers that the current Social Security system pays to workers retiring at age 65. If that is the case, the threshold would be 42.5 percent of an average worker's last earnings before retirement. Based on the distributional assumptions discussed below, a threshold for each quintile in each year is calculated.

The threshold replacement rates are compared to actual ones. Under CSSS' option II, benefits would be a reduced Social Security benefit plus private account savings. The replacement rates from Social Security vary with income. To model the distribution of income upon retirement, it is assumed that the income distribution in the year of retirement reflects the distribution of Social Security benefits of new retirees, which in turn is assumed to mirror the wage distribution of the population as a whole.¹¹ Using the current Social Security formula, an unadjusted replacement rate from Social Security benefits for each quintile is calculated. This replacement rate is adjusted for the benefit cut resulting from the change from wage to price indexation by discounting it each year by the difference between wage and price growth. For each quintile of the earnings distribution, the Social Security benefit is compared to the minimum benefit under CSSS' option II and retirees are given the larger of the two. The benefits from private accounts, which are offset by the liability account, are added to the Social Security benefit.

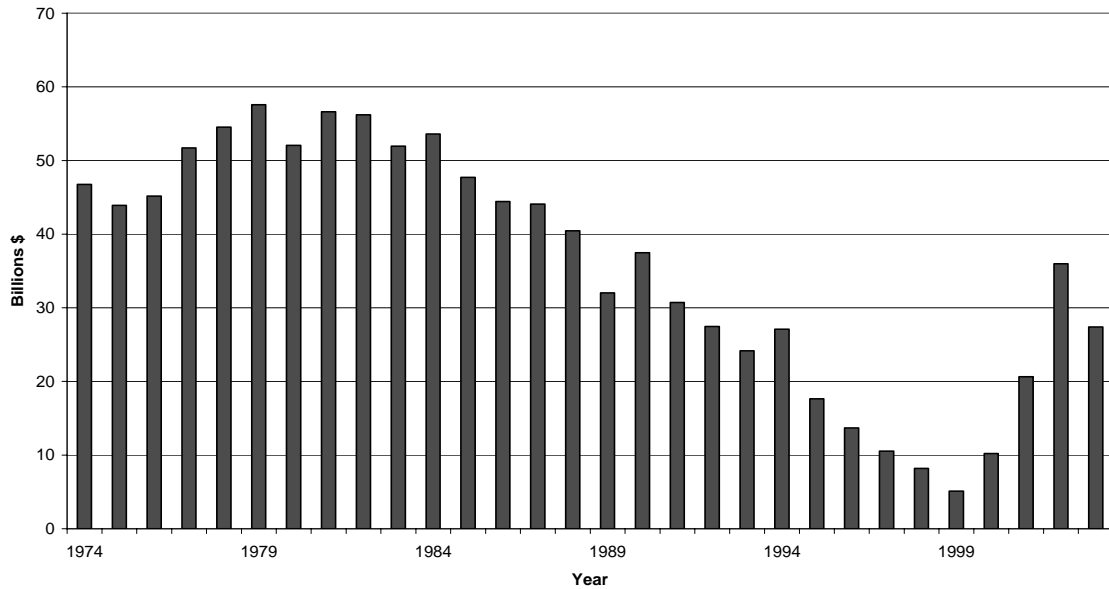
The costs of bailouts, if there are any shortfalls, are calculated as follows. The total amount of additional benefits that the government needs to provide through a bailout is the share of income that workers should have expected to have replaced, but that wasn't. This is the difference between the threshold and the actual replacement rate times the average income times the number of people retiring in each quintile.¹² The bailout has to provide enough money to new retirees to provide this additional benefit for their entire retirement on an inflation adjusted basis, just like Social Security would. The stream of benefits that bailout has to offer is discounted back to the actual year. This amount, together with interest earnings, would allow workers to have a retirement income exactly equal to the threshold replacement rate.

Based on these assumptions, the government would have had to bail out private accounts every single year from 1974 to 2003 (figure 6). For a number of years, the bailouts would have exceeded \$50 billion (in 2004 dollars) annually. At their lowest point, the bailouts would still have cost \$5.1 billion in 2004 dollars. The sum of all bailouts over the past 30 years would have totaled \$1.1 trillion in 2004 dollars.

¹¹ Average earnings are calculated for each quintile. Annual earnings are calculated as 50 times average weekly earnings using the Current Population Survey for the years from 1979 to 2003 (CEPR, 2004). For earlier years, it is assumed that average earnings grew at the rate of average incomes (Census, 2004).

¹² The number of people retiring is one-tenth of the number of employees in the age group 55 to 64.

Figure 6: Cost of Government Bail-outs, CSSS Option II, Constant 2004 Dollars



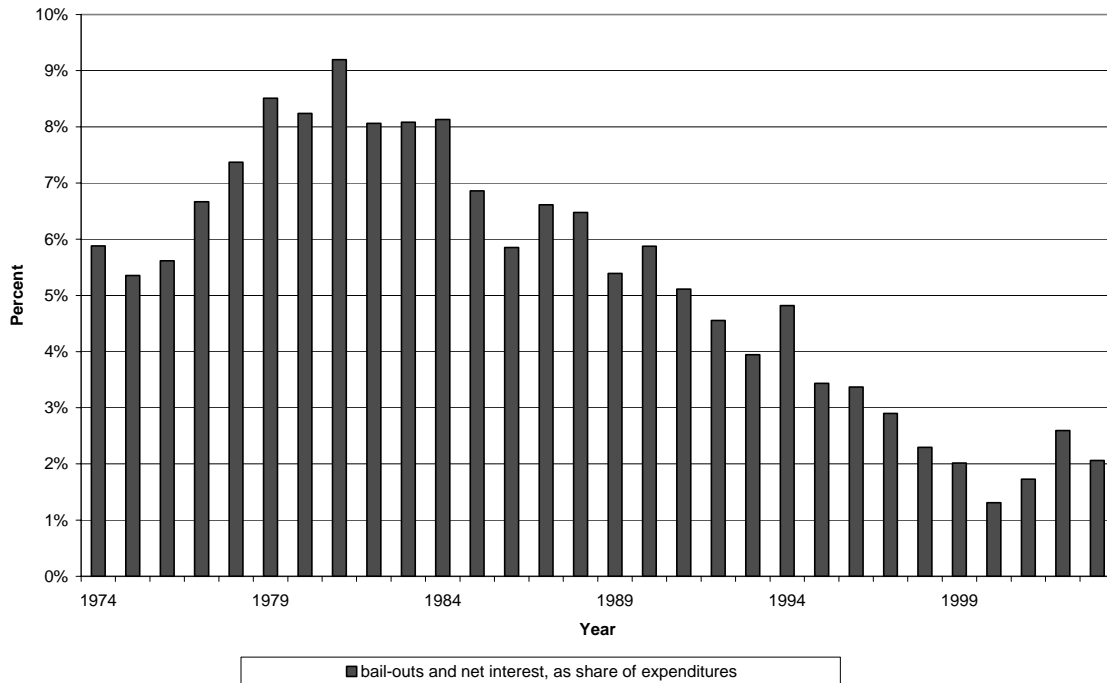
Notes: All figures in billions of 2003 dollars. CPI is used as deflator.

How realistic is it to expect the government to insure the Social Security gamble? How likely is it that such large bailouts would happen for many years in a row? It seems entirely reasonable to assume that bailouts would occur several years in a row for a number of reasons. For one, it would be hard for the government to bail out one generation of retirees, but not another. Moreover, even if the government notices that one generation of retirees is likely to have less retirement income than it expected, there is little else that can be done to boost the replacement rate since the government has no direct influence over the stock market.

It is useful to put these bailout costs in perspective. Specifically, government expenditures would have increased.¹³ In addition, if bailouts create or enlarge existing deficits, the government faces higher interest payments due to the additional debt. Expressed as share of government expenditures, the bailouts of private accounts under CSSS' option II would have exceeded 9 percent at their highest point (figure 7). For more than ten years, the bailouts would have been greater than 6 percent of government expenditures.

¹³ Government expenditures without Social Security are considered.

Figure 7: Bail-outs Relative to Government Expenditures, CSSS Option II



Source: BEA (2004) and author's calculations.

The estimated results depend to a large degree on the choice of the threshold replacement rate. There are two possible objections to using thresholds for each quintile that are tied to an average replacement rate of 42.5 percent. First, one could argue that the government may want to bail out only lifetime low-income earners. However, this would create a heavy bureaucratic burden. It would also be politically difficult to decide where the income cut-off for bailout beneficiaries should be. After all, everybody paid into the system.

Second, the initial replacement rate should not be the threshold for the system since benefits are being reduced annually. However, this contradicts the rhetoric of those who favor privatization. Workers are promised that they could at least make up for the reduction in Social Security benefits with the savings in private accounts. Consequently, workers should expect that their replacement rate will on average at least remain constant.

Even if no specific threshold is replaced, the starting replacement rate is likely a good target, since it is the benefit level that the first generation under the system was actually given. Demands by subsequent generations to see at least the same level of benefits, relative to their pre-retirement earnings, could likely only be muted if future retirees would build up additional savings elsewhere. For one, this is not part of the current Social Security privatization debate. In addition, economic evidence indicates that workers will not compensate for the loss of guaranteed Social Security benefits with additional savings. (Bernheim and Levin, 1989; Coates and Humphries, 1999; Munnell,

1974; Wolff, 1988). Without additional savings, retirees will have to rely on the revamped Social Security system to at least the same degree as prior generations. Lastly, the mere possibility of future bailouts reduces people's incentives to save. Importantly, the government that institutes privatization cannot commit future governments to do nothing if retirees have saved too little. Thus, workers know that if the shortfalls become large enough in the aggregate, future governments will intervene. As a result, their incentive to save more outside of Social Security is reduced.

Notwithstanding the rationale for using 42.5 percent as the threshold here, it is instructive to see what happens if the threshold is lowered to 40 percent or raised to 45 percent. The total bailout amounts as well as the relative shares of government expenditures vary with the thresholds. However, the overall figures remain quite large (table 1). Even with a threshold rate of 40 percent, the total costs of the government bailouts over the past 30 years would have been \$900 billion in 2004 dollars.

Table 1
Budget Effects under Different Thresholds

	Threshold Replacement Rate (Percent)		
	40	42.5	45
Total bailout costs, 1979 to 2003 (in 2004 \$)	\$900	\$1,074	\$1,254
Max. share of government expenditures (in percent)	8.2	9.2	10.2

Alternatives to Bailouts Create Severe Labor Market Pressures

One of the obvious counterarguments to large government bailouts occurring is that workers would simply adjust if they received less retirement income than they expected. A primary mechanism of adjustment for older workers would be to stay in the labor force longer.

Working longer is only feasible if employers are hiring older workers. However, historically it has been the case that would-be retirees would have ended up with less than they expected exactly at the time when unemployment rates were already high.¹⁴ Given that over the past 30 years there has been substantial unemployment because workers who wanted to work could not find jobs, it is likely that older workers staying in the labor

¹⁴ It is assumed that all would-be retirees stay in the labor force until the combination of aging, additional savings and more earnings on assets generates a replacement rate greater than the threshold. Actual rates of return and earnings are assumed.

force would have prohibited younger workers who were looking for a job from finding one.¹⁵ Thus, the unemployment rate would have risen.

Because the average replacement rate would have fallen short of the threshold in every year from 1974 to 2003, people would have had to work longer to make up for the shortfall. This would have created large pressures on the labor market, pushing the unemployment rate quickly to comparatively high levels (figure 8).¹⁶ In extreme cases, the unemployment rate could have risen close to 13 percent. Also, the unemployment rate would have declined less in the 1990s than it actually did. Even if only half of workers had decided to stay in the labor force, the unemployment rate would still have risen to more than 11 percent. Thus, too few benefits from Social Security could have severe labor market implications, unless workers receive additional benefits from somewhere else, e.g. in the form of additional income support programs.

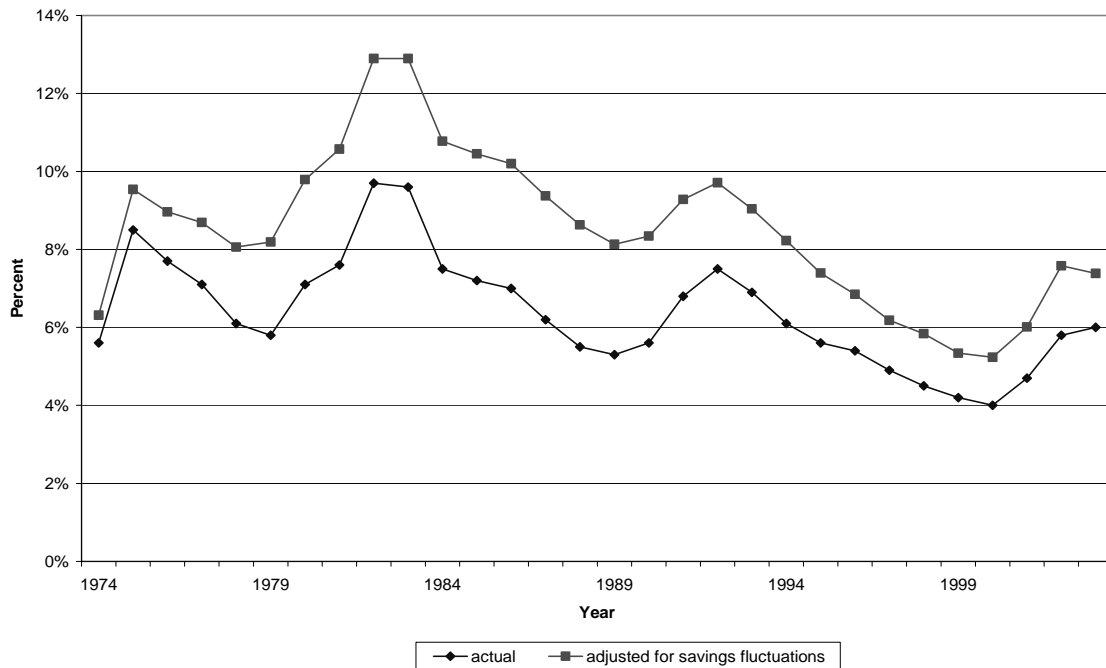
Moreover, labor market pressures would tend to increase at times when unemployment is already high. Specifically, average rates of return for 35-year periods and the unemployment rate tend to systematically move in opposite directions.¹⁷ Unemployment is high after workers would have just experienced a relatively poor performance on the stock market.

¹⁵ For simplicity reasons, it is assumed that wages are rigid and do not fall with the additional labor supply and that all older workers wanting to work longer could work at their previous wages. If wages fell, older workers would have to stay in the labor force even longer, although at a lower unemployment rate.

¹⁶ It is assumed that the basic Social Security replacement rate is not reduced after age 65, i.e. delayed retirement credits offset the cuts to initial benefits resulting from price instead of wage indexation.

¹⁷ From 1948 to 2004, both series are stationary at the 1 percent level. Tests for Granger causality fail to reject the null hypothesis that the unemployment rate does not Granger cause the average real rate of return on the stock market. However, Granger causality tests reject the null hypothesis that the average real rate of return does not Granger cause the unemployment rate at the 1 percent level, regardless of the lag included.

Figure 8: Actual and Adjusted Unemployment Rates, CSSS Option II



Note: Adjusted unemployment rate adds the number of additional workers to the number of unemployed and the labor force. Sources are BLS (2004b) and author's calculations.

Chance of Future Bailouts Adds Substantial Costs to Privatization

The discussion so far has focused solely on the past decades, which, as already discussed, present a unique set of circumstances. Policymakers considering privatization, though, should be interested in the likely costs of bailouts if Social Security privatization were to become a reality. To calculate the probabilities of specific future bailouts, 10,000 hypothetical scenarios for the future are created based on historic trends. It is assumed that a privatized Social Security system would start in 2006. If only workers under the age of 55 were affected by this system, the first generation of retirees that could be affected by the new system and that could face some, albeit small chance of a bailout due to the gradual reductions in Social Security benefits would retire in 2016.¹⁸

Two different sets of thresholds for the future are considered. One is the replacement rate of pre-retirement earnings at age 65 currently scheduled under Social Security. Because the retirement age is currently scheduled to rise, benefit levels are also declining, lowering this threshold to 36 percent of pre-retirement earnings. Alternatively, the previous threshold of 42.5 percent is used for the same reason as discussed previously. Future generations may expect the same level of retirement benefits, particularly if they are unaware of already existing cuts to Social Security.

¹⁸ These dates could be pushed into the future, which would not change the basic point of massive bailouts, but alter the costs of the bailouts over the next 75 years slightly. See appendix for an example.

Under each of the 10,000 hypothetical scenarios, possible shortfalls are calculated over the same 75-year horizon as Social Security projections are currently, i.e. through 2080. Shortfalls in future years are expressed as net present value and added together for all 75 years in each of the 10,000 hypothetical scenarios. Because of the large number of hypothetical examples, the probability of specific shortfalls can be calculated. On average, the government is facing a shortfall of \$601 billion in present value terms if the declining threshold is used. There is an almost 40 percent chance that the shortfall could top \$750 billion in present value terms. Furthermore, in one out of five scenarios, the shortfall was larger than \$1 trillion in present value terms (figure 9). When considering these numbers, it is important to note that the expected retirement income coming from Social Security’s guaranteed benefit is scheduled to decline relative to pre-retirement earnings even after 2080. In other words, the chance of large bailouts beyond the projection horizon does not diminish and may even increase.

The numbers are obviously larger when a higher threshold value is used (figure 10). With a fixed threshold of 42.5 percent, the average costs of future bailouts over the 75-year horizon are \$874 billion in present value terms. Now, there is a 4-in-10 chance that the government will face total bailout costs of more than \$1 trillion in present value terms. There is also a substantial chance that the costs of future bailout will exceed \$1.5 trillion through 2080 (figure 10).

Figure 9: Probability of Specific Bail-outs (NPV in 2005)

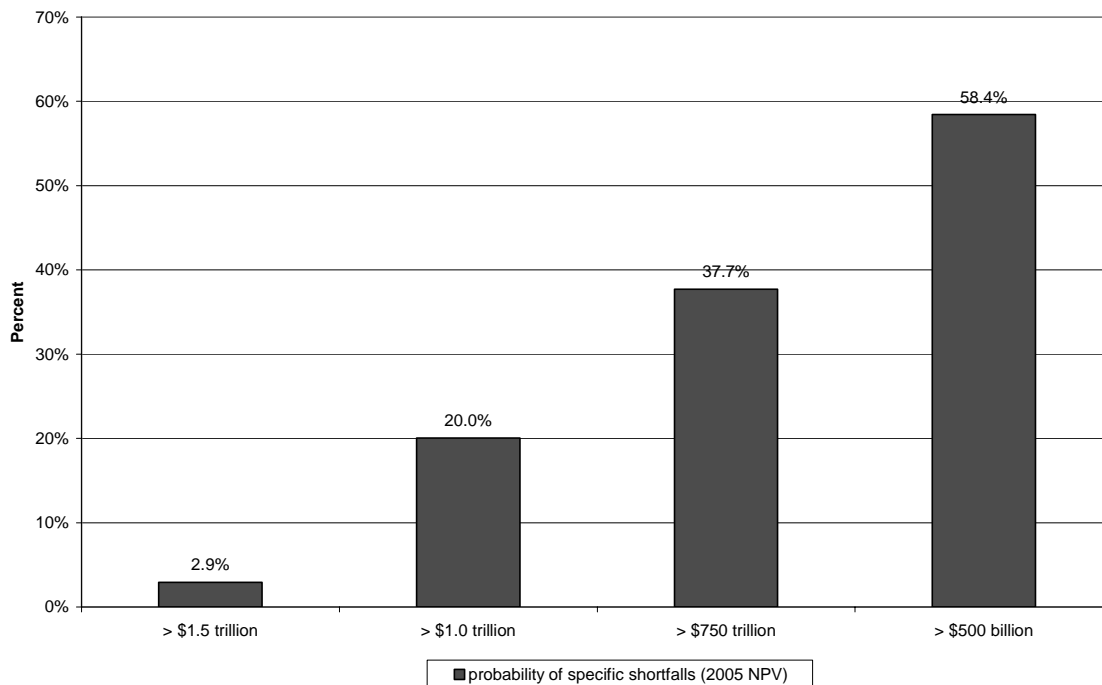
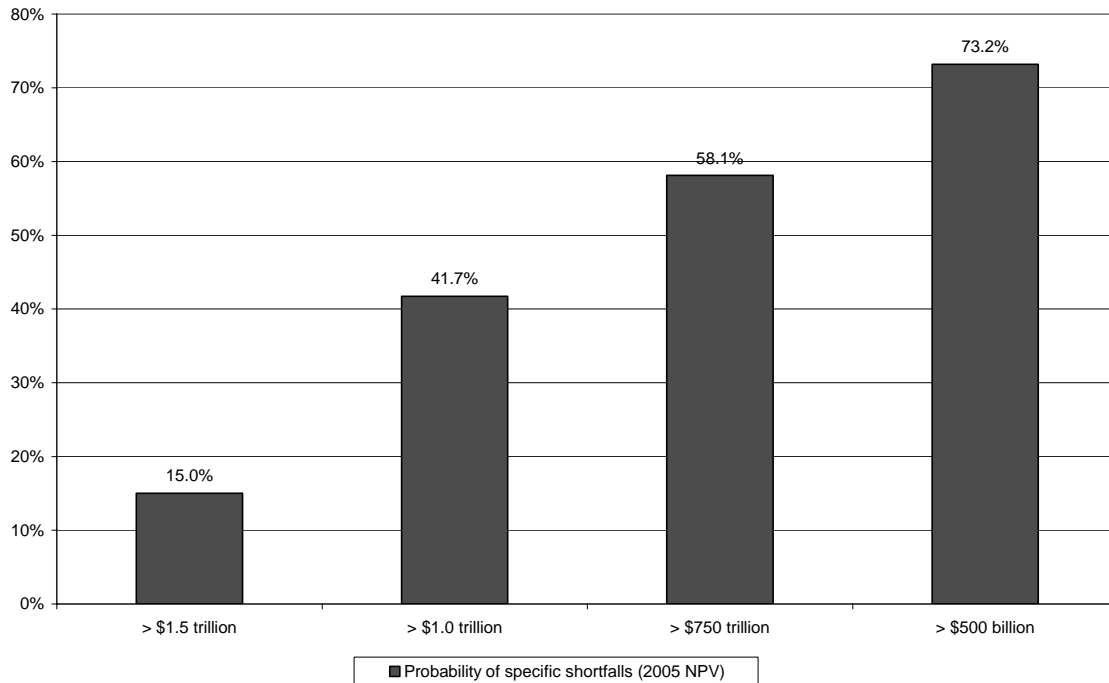


Figure 10: Probability of Specific Shortfalls (2005 NPV), Constant Threshold



To get a clear picture of the fiscal impact of Social Security privatization, the costs of insuring the privatization gamble – the sum of likely future bailouts – have to be added to the transition costs that the establishment of private accounts will require. After all, money that is now used to pay for benefits would then go to establishing private accounts. Diamond and Orszag (2002) report that the transition costs of CSSS option II would have required transfers to Social Security to the order of \$2.2 trillion in present value terms in 2002. If disability benefits were maintained at their current level, the transfer would even increase to \$2.8 trillion.¹⁹ Combined with the costs of bailouts calculated here, the government’s costs would exceed \$2.8 trillion at the low end and surpass \$3.7 trillion at the high end.

¹⁹ Under the parameters laid out by President Bush in connection with his State of the Union address on February 02, 2005, these costs could diminish over the 75-year projection horizon.

Conclusion

Under Social Security privatization, workers face the risk that financial markets can underperform during their working careers. This could happen for entire cohorts of retirees. One way to address this shortfall would be for workers to work longer, which would create enormous labor market pressures, with much higher unemployment rates or lower wage growth as the result. To avoid such large labor market pressures, the federal government would likely have to bail out individual accounts instead. Based on historical trends, the costs of such bailouts could total between \$600 billion and \$900 billion in present value over the next 75 years.

Large market fluctuations are unavoidable for individual accounts. These fluctuations can create substantial shortfalls in savings for entire generations of retirees. Thus, the government would likely have to implement financial support programs to avoid spikes in old age poverty. These bailouts could come in a number of forms, such as expanded social programs or direct transfers to account holders. Thus, privatization would essentially amount to a system of insured gambling, where the government pays the bill if the market underperforms.

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Technical Appendix: Bailout Costs of President Bush's Plan

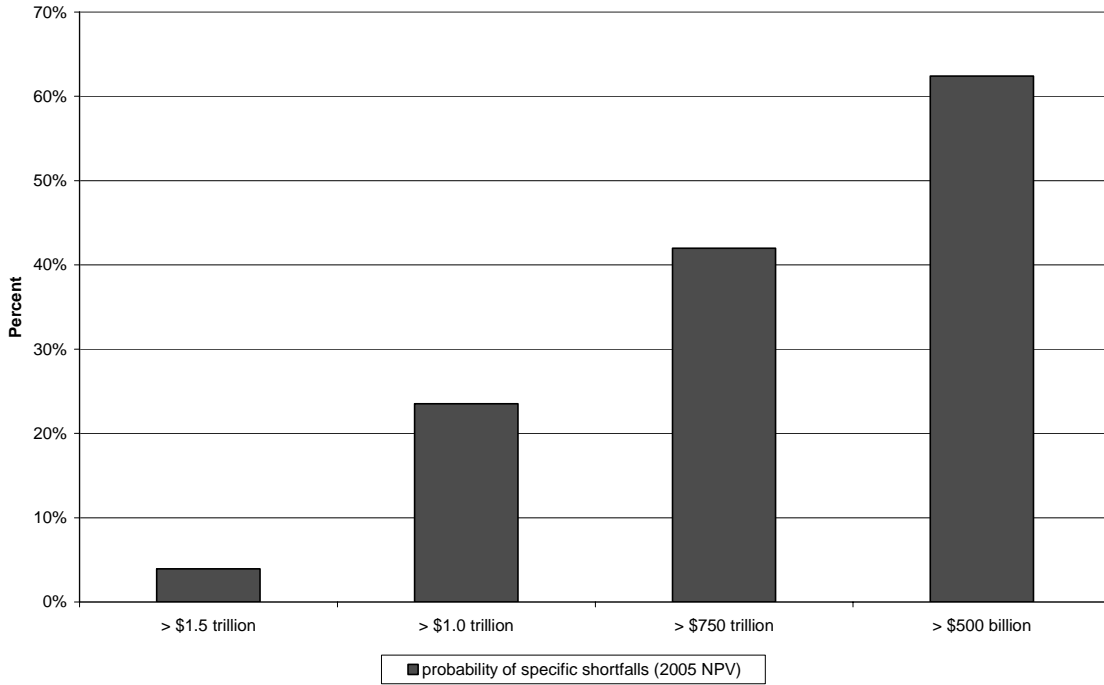
There is no complete privatization plan from President Bush. However, the White House, in a briefing before the State of the Union, laid out some specifics, which differ slightly from CSSS' option II. Specifically, the interest rate charged to the liability accounts would be 3 percent above inflation instead of 2 percent. Also, the contribution limits would increase by wage growth plus \$100 each year from an initial \$1,000 in 2009. There is no contribution above the limit. The people who could contribute would be limited in 2009 and 2010, but everybody could contribute thereafter.²⁰ Indications from the White House further indicate that all expected shortfalls for Social Security over the 75-year projection horizon could be covered by benefit cuts. The benefit cuts proposed under CSSS' option II would accomplish that. For the calculation, contributions and changes to the guaranteed benefit start in 2011.

Using the same methodology as laid out in the text, the expected shortfall from President Bush's plan would on average equal more than \$652 billion in present value terms if the declining replacement rates under Social Security are used (figure A-1). There is now an almost one in four chance that the total bailout costs will exceed \$1 trillion over the next 75 years. If a fixed threshold of 42.5 percent is used, the expected costs of bailouts over the next 75 years could total \$933 billion in present value terms. There is a greater than one in six chance that the total bailouts will cost more than \$1.5 trillion in present value terms over the next 75 years (Figure A-2).

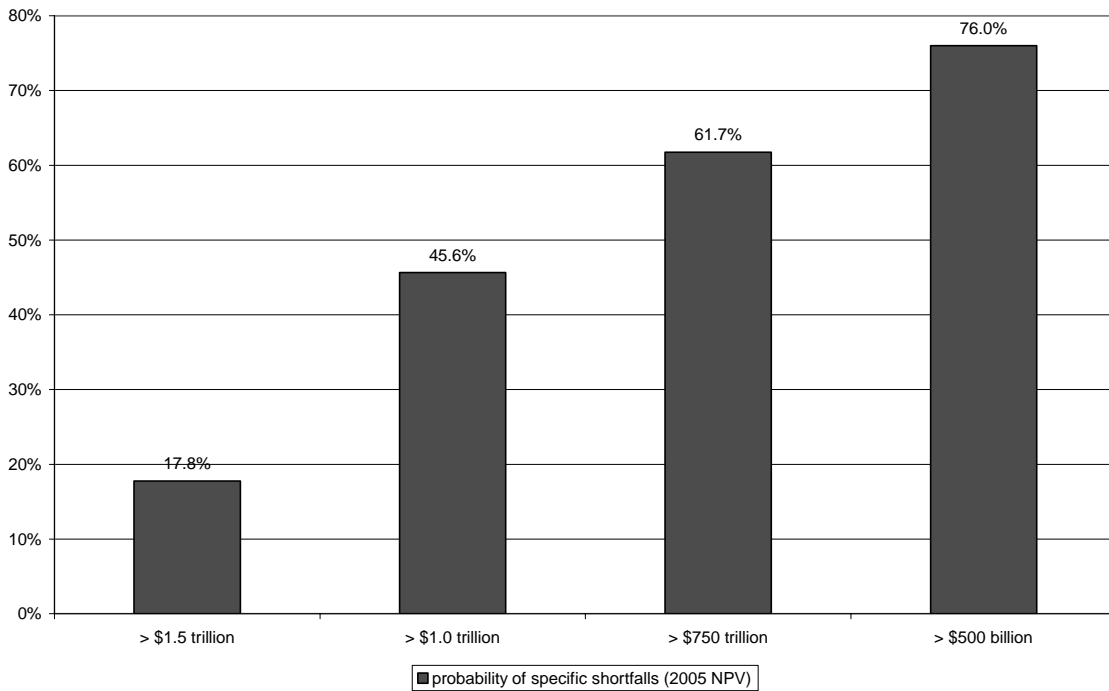
The bailout costs of a plan with these specifics would be higher than CSSS option II, largely because the balances in the liability account would be greater due to the higher interest charged for them and thus the reduction of benefits for private account holders would be greater. On the other hand, the fact that the privatization plan would start later should reduce the expected bailout costs, as there are fewer years in the projection horizon. On average, though, the bailout costs are still between \$51 billion and \$59 billion greater than under the specifics of CSSS' option II.

²⁰ The White House also indicated that people's investment choices would be limited upon approaching retirement. No specifics were available. Thus, the balanced portfolio assumption is maintained.

A-1: Probability of Specific Shortfalls (2005 NPV)



A-2: Probability of Specific Shortfalls (2005 NPV), Constant Threshold



About The Author

Christian E. Weller is a Senior Economist at the Center for American Progress, where he specializes in Social Security and retirement income, macroeconomics, the Federal Reserve, and international finance. Prior to joining American Progress, he was on the research staff at the Economic Policy Institute, where he remains a research associate. Dr. Weller has also worked at the Center for European Integration Studies at the University of Bonn, Germany, in the Department of Public Policy of the AFL-CIO in Washington, D.C., and in universal banking in Germany, Belgium and Poland. His publications appear in publications ranging from the *Cambridge Journal of Economics*, *the Journal of Policy Analysis and Management*, *the International Review of Applied Economics*, *the Journal of Development Studies*, and the *Journal of International Business Studies* to the *Atlanta Journal Constitution*, *USA Today*, *Detroit News*, *Challenge*, and the *American Prospect*. Dr. Weller is often cited in the press and he has been a frequent guest on news programs on ABC, NBC, CNN, MSNBC, CNBC, Fox News and Bloomberg Television. Dr. Weller holds a Ph.D. in economics from the University of Massachusetts at Amherst.

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