

## ***Personal Accounts in a Down Market How Recent Stock Market Declines Affect the Social Security Reform Debate***

by Andrew G. Biggs

**No. 74**

**September 10, 2002**

The S&P 500 stock index is down almost 40 percent from its peak value in 2000. Where does that leave the case for personal retirement accounts, which would allow workers to invest their Social Security payroll taxes in stocks and bonds through accounts similar to individual retirement accounts or 401(k)s?

The evidence shows that long-term market investment for Social Security, while hardly risk free, bears little resemblance to the “meltdown” scenarios painted by many account opponents. Opponents of personal accounts implicitly assume that workers with accounts would be short-term investors without any nonstock diversification. In the real world, the combination of asset diversification between stocks and bonds and time diversification over long time

horizons reduces the risks that a short-term market drop could substantially affect workers’ retirement incomes. Even in today’s bear market, workers with personal accounts would retire with higher total retirement incomes than the current pay-as-you-go program is able to pay.

Moreover, personal accounts would allow individual workers to take on only as much market risk as they are comfortable with. The public realizes this, and support for personal accounts is higher today than it was at the market’s peak.

If personal accounts would be a good policy even today, and if they retain public support even today, it is hard to imagine a circumstance in which they would not. Today’s stock market declines do not contradict the case for personal accounts. In fact, they confirm it.

**Even today, personal accounts would increase retirement benefits while giving workers greater ownership and control over their savings.**

## **Introduction**

Imagine the following deal: You could invest part or all of your Social Security taxes in a personal retirement account. However, your account could hold nothing but stocks and you would retire during the biggest bear market since the Great Depression.

Would workers accept such a deal? I would. Even today, personal accounts would increase retirement benefits while giving workers greater ownership and control over their savings.

Slumping stock markets have opponents of personal accounts claiming vindication. A falling stock market, they argue, shows that only a traditional government-run, defined-benefit Social Security program can provide adequate retirement security. As Senate Majority Leader Tom Daschle (D-S.D.) put it on July 12:

After what's happened in the stock market the last few weeks, we think it's a terrible idea. . . . Imagine if you were retiring this week, with most major stock indexes hitting five-year lows.<sup>1</sup>

Indeed, many Americans are sure to be concerned after hearing such comments.

But in judging the risks of long-term market investment on the basis of just a few months or years of returns, these opponents of personal accounts are victims of the so-called law of small numbers—the propensity to believe that a small sample is representative of the larger universe of outcomes.<sup>2</sup> Like those who took a few years of double-digit stock returns in the 1990s to portend a future of limitless investment riches, opponents of personal accounts have failed to examine the historical facts regarding stock and bond returns over the long term.

Those facts show that, even today, personal accounts would increase benefits and help strengthen Social Security for the long term. However bad the market's recent performance, a worker retiring today would have begun

investing in the late 1950s. The stock market has never once lost money over even 20-year periods. Even without diversification, a worker retiring today would have 40 years of investment behind him to make up for recent losses. A worker just entering the market would have 40 years to regain lost ground. There is simply no way recent events can credibly justify a disastrous scenario for personal accounts. Even a worker retiring in the Great Depression would have received a 4 percent annual return after inflation;<sup>3</sup> a worker retiring today would do substantially better.

Personal accounts give workers the opportunity to diversify their investments across hundreds or even thousands of stocks and bonds, reducing the risk that declines in a single company or asset class would severely harm a worker's retirement income. Moreover, long time horizons provide "time diversification" that smoothes out the short-term volatility of investments in the stock market.

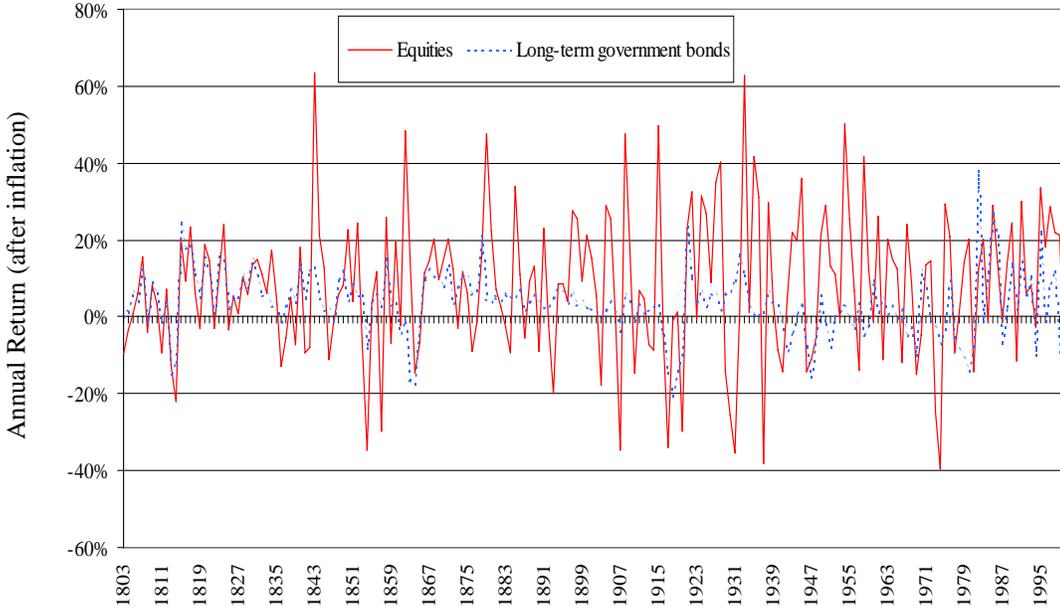
Historically, in almost all cases workers with diversified market investments would have received substantially higher benefits if allowed to invest part or all of their payroll taxes in personal retirement accounts. Under Social Security reform proposals already on the table, practically all workers could expect to increase their total retirement incomes by opting to participate in personal accounts, even if they had to give up part of their traditional benefits to do so.

Stock market investment is indeed risky over the short term. But over the long term, stocks and bonds clearly can form the basis of stable and adequate retirement wealth accumulation for all workers.

## **Asset Diversification: Mixing Stocks and Bonds**

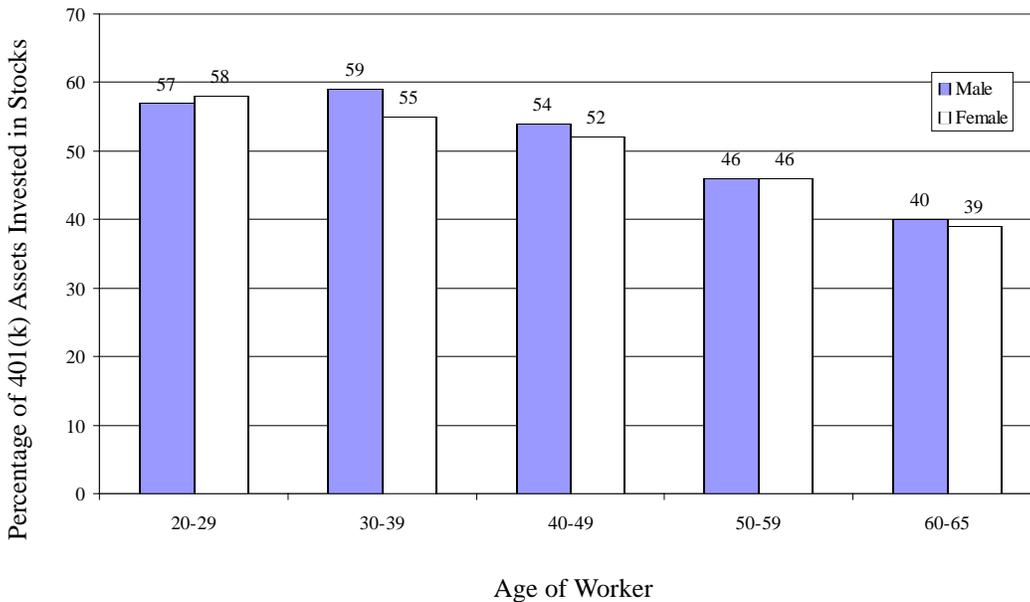
Stocks are risky investments over the short run, varying greatly from year to year. Bonds and other fixed-income investments, while producing lower returns over the long term, provide the year-to-year stability that many investors demand (Figure 1).

**Figure 1**  
**Stocks Produce Greater Returns Than Bonds over the Long Run but at the Cost of Higher Short-Term Volatility**



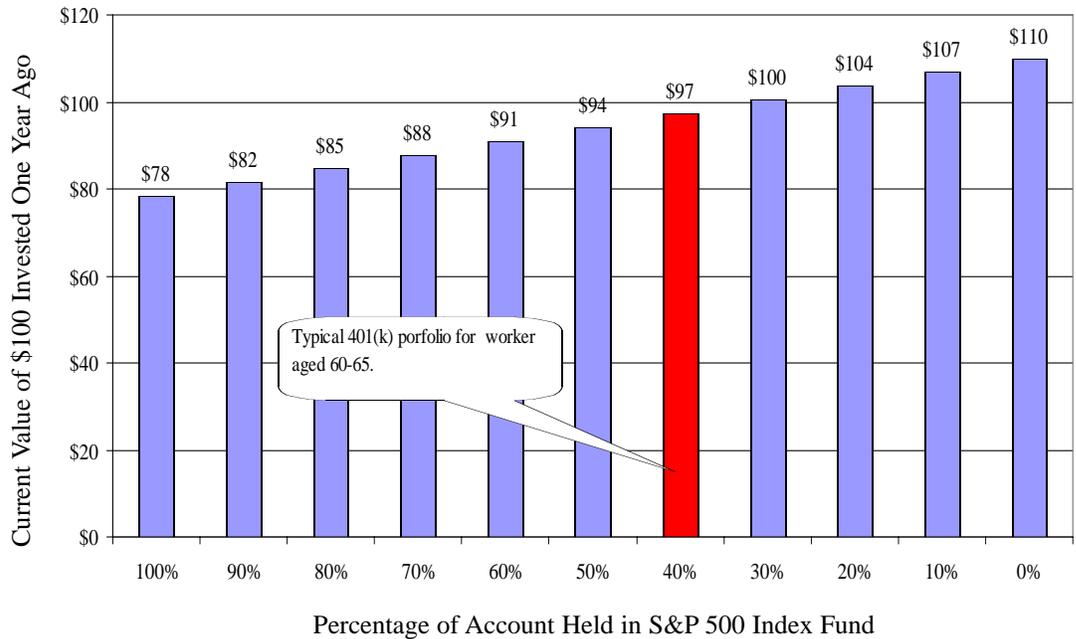
Source: Global Financial Data.

**Figure 2**  
**Workers Move Out of Equities As They Near Retirement, Limiting Their Exposure to Stock Market Risk**



Source: Robert L. Clark et al., "Making the Most of 401(k) Plans: Who's Choosing What and Why," in *Forecasting Retirement Needs and Retirement Wealth*, ed. Olivia S. Mitchell, P. Brett Hammond, and Anna M. Rappaport (Philadelphia: University of Pennsylvania Press, 2000).

**Figure 3**  
**Typical Worker Aged 60-65 Would Have Lost Only about 3 Percent on His Account Last Year**



Source: Author's calculations. Nonstock portion of account assumed to be invested in Lehman Brothers long-term bond index. Based on 21.6 percent loss on S&P 500 in prior year (net of dividends) and 9.9 percent gain on Lehman Brothers bond index.

**Despite truly awful stock market returns in the past year, a typical worker's account balance would be virtually unchanged.**

For this reason, most financial advisers recommend that investors move from a predominantly stock-based portfolio when they are young to fixed-income investments such as bonds as they near retirement. Younger workers have more time to make up for market losses, and more future labor income with which to supplement their savings. A common rule of thumb is that the percentage of stocks in a worker's portfolio should equal "100 minus your age," such that a 20-year-old would begin his working life with 80 percent of his savings going into stocks and retire at 65 with just 35 percent in equities.

Statistics from 401(k) plans show that most workers stick reasonably close to these guidelines.<sup>4</sup> The average worker (Figure 2) aged 60–65 years keeps about 40 percent of his 401(k) assets invested in stocks and 60 percent invested in fixed-income assets such

as bonds. A younger worker, by contrast, reverses the mix to 60-40 in favor of stocks.<sup>5</sup>

To illustrate the results of life-cycle investing, imagine a 65-year-old average-wage worker retiring today. One year ago he had \$100,000 in his personal account, of which he had allocated 40 percent to the S&P 500 stock index and 60 percent to the Lehman Brothers aggregate bond index. What would his account be worth today, assuming he made no additional contributions in the last year?

Believe it or not, despite truly awful stock market returns in the past year, a typical worker's account balance would be virtually unchanged. The loss of 21.6 percent on the stock portion of his portfolio would be almost matched by the 9.9 percent gain on the larger bond portion, for a total year-end loss of just 3.25 percent (Figure 3).

In other words, if that worker had started

the year with \$100,000 in his account, he would have ended with \$97,288. This loss would reduce his monthly retirement income by only around \$15.<sup>6</sup>

Moreover, a typical low-income worker aged 60–65 has only 23 percent of his 401(k) invested in equities. This low-income worker would have made money last year, earning a return of 2.6 percent as gains from the bonds in his portfolio outweighed losses in the stock market.

Any investor would rather make money than lose it. But these results show that even the poor stock market results of the past year would have had only a small impact on a typical worker holding a personal retirement account. As Dallas Salisbury of the Employee Benefit Research Institute remarks, “There is no retirement crisis because of the stock market decline.”<sup>7</sup> Workers’ retirement accounts are sufficiently diversified that accounts lost only 5–10 percent on average last year, according to the *Los Angeles Times*, with those nearing retirement presumably suffering even smaller declines.<sup>8</sup>

## Time Diversification: Stocks for the Long Run

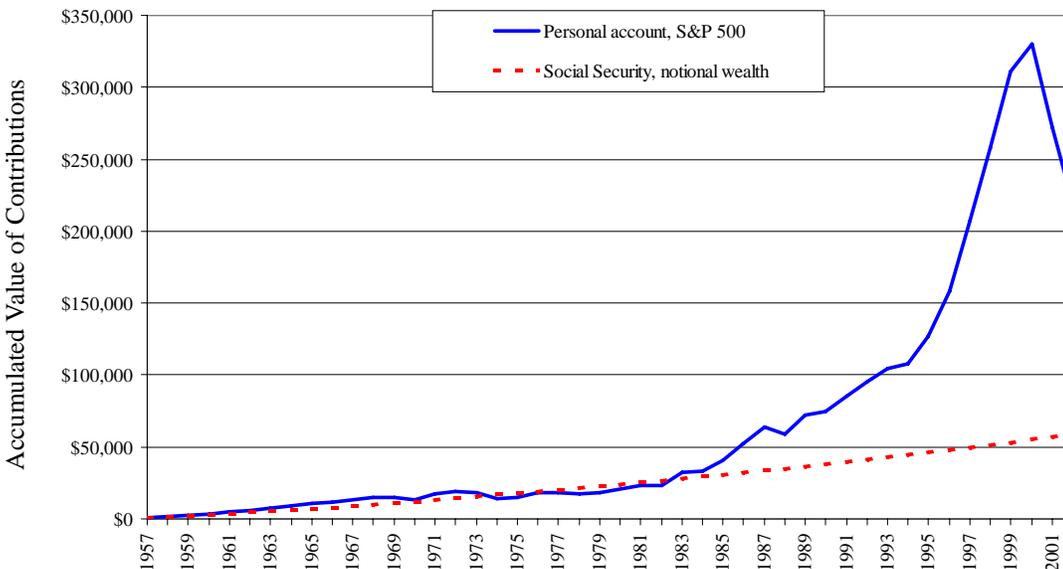
While relatively small portfolio declines despite recent stock market losses may reassure the nervous, what really matters for personal accounts isn’t how they would have performed over the last year, or over any single year. For retirement investment, what matters is where you start and where you end up. What happens in between is much less important. Retirement investing is about the long run, and over the long run stocks have been remarkably safe investments.

As noted earlier, most workers diversify their investments between stocks and bonds, moving out of equities as they approach retirement. Opponents of personal accounts, however, often assume that workers have their entire accounts invested in stocks, maximizing their risk in the event of a market decline. Let’s see what that would mean.

Figure 4 uses a male worker earning the average wage each year, currently \$35,000,

**The poor stock market results of the past year would have had only a small impact on a typical worker holding a personal retirement account.**

**Figure 4**  
**Even after Market Drop, Personal Account Would Pay Higher Return Than Traditional System**



Source: Author's calculations.

**A worker investing only in stocks would receive benefits 2.8 times higher than he would had he “invested” the same amount of money in the current program.**

and retiring in 2002. It assumes that he deposited 3 percentage points<sup>9</sup> of his wages in a personal account invested only in the S&P 500 stock index. Compared to this amount is the notional “wealth” he would have accumulated by putting the same amount of money into the current system.<sup>10</sup>

The return from Social Security is assumed to be 1.74 percent annually above inflation. This percentage is the return the Social Security Administration projects that a single male retiring today can expect from his Social Security payroll taxes. This estimate includes all retirement, survivors’, and disability benefits.<sup>11</sup> Married couples, particularly those with only a single earner, could expect somewhat higher returns. Future retirees can generally expect lower returns than those retiring today.

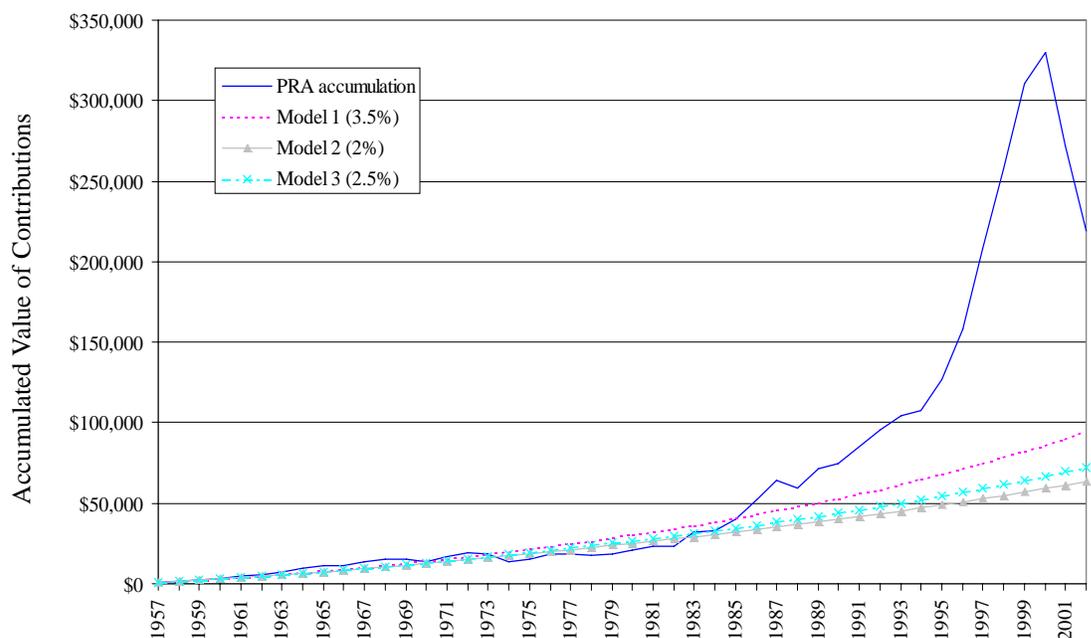
As Figure 4 shows, even with the recent stock market decline, a worker investing only in stocks would receive benefits 2.8 times higher than he would had he “invested” the same

amount of money in the current program.

Put another way, the recent decline in stock prices means the worker’s personal account would be worth the same today as it was worth in 1997. But that worker’s Social Security “savings” would be worth today only what the personal account was worth in the late 1980s. It would take a much larger decline than the one we have seen for a personal account to be a worse “deal” than the current program.

Personal account-based reform proposals, such as those from the President’s Commission to Strengthen Social Security, establish an “offset interest rate” that governs the amount of traditional benefits an individual must give up in exchange for being allowed to invest part of his payroll taxes in a personal account.<sup>12</sup> If the personal account’s rate of return equals the offset interest rate, the amount deducted from the worker’s traditional benefits would precisely equal the amount he would gain via the

**Figure 5**  
**Personal Accounts Would Increase Benefits for Workers Retiring Today, Even after Giving Up Part of Their Traditional Benefits As Envisioned under Plans from the President’s Commission to Strengthen Social Security.**



Source: Author's calculations.

account. If the account's return exceeded the offset interest rate, the worker would receive higher total retirement benefits by virtue of opting for an account.<sup>13</sup>

In the commission's three reform proposals, the members established offset interest rates at 3.5 percent, 2 percent, and 2.5 percent, respectively. As Figure 5 shows, in all three cases a worker retiring today and holding a personal retirement account would have received an average return exceeding the offset interest rate and would therefore have received higher total benefits by holding a personal account.

Hence, even if the government must incur costs to move the system to a sustainable basis, which is the case regardless of whether personal accounts are incorporated into the program, at the margin a worker would have been wise to opt for an account.

Some observers might note that for a worker retiring today it was not until the mid-1980s that the balance of the personal account portfolios permanently exceeded the notional balance accumulated via the personal account offset. This is not to say, however, that an individual who retired before the mid-1980s would not have benefited by holding a personal retirement account. Figure 5 applies only to an individual retiring this year. A worker retiring in the mid-1980s would have begun investing in about 1940, benefiting from years of above-average growth during that period.

Others would argue that reform proposals make other changes to benefits in addition to introducing personal accounts. Two of the three reform models from the president's commission would reduce the rate of future benefit growth in order to bring the system back to financial balance. Some might object that excluding these other changes gives an unrealistically optimistic picture of the benefits that personal accounts might provide.

But Social Security will require changes in the future to balance its finances whether or not personal accounts are introduced.<sup>14</sup> If these changes must take place even in the absence of personal accounts, it is not inappropriate to examine the effects of accounts

as an individual element in overall reform. Moreover, if Social Security were in financial balance—as it is at present, even if not over the long term—personal accounts could be introduced without detriment to the traditional system's long-term financing.<sup>15</sup>

## Simulating Personal Accounts through History

The Congressional Research Service took a more wide-ranging look at market risk and personal retirement accounts, using stock and bond returns dating back to 1927 to simulate how individuals with personal accounts would have fared had accounts been introduced in the past.<sup>16</sup>

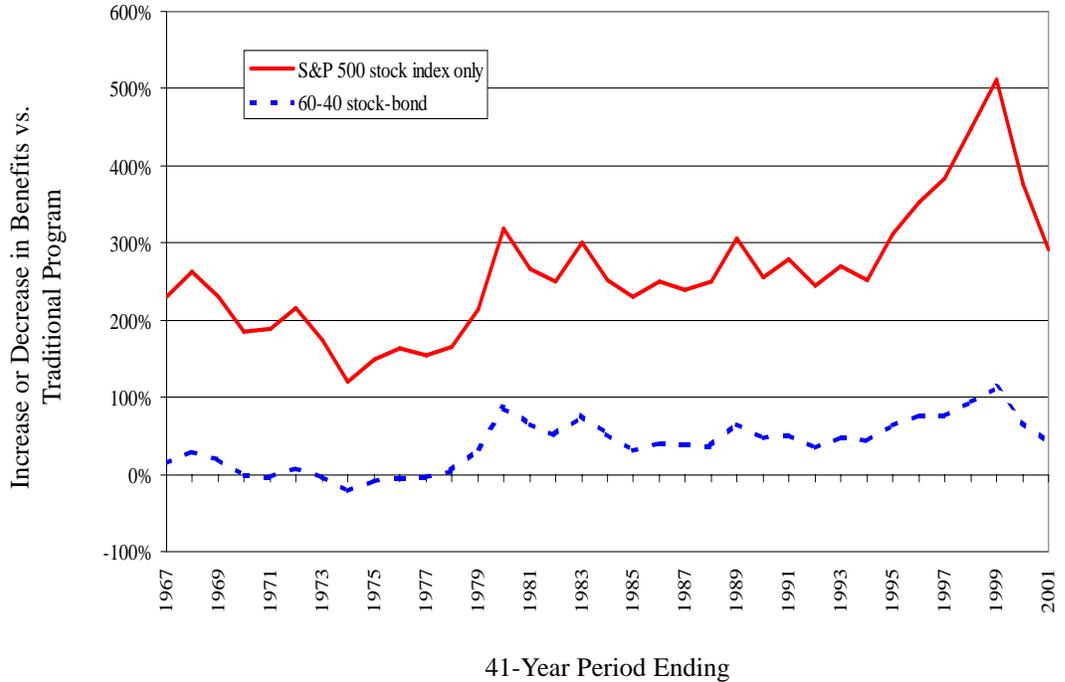
It is true, as the CRS finds, that stock returns vary greatly from year to year. But that variation takes place at a level higher than that provided by Social Security. That is, while historical returns don't guarantee that a worker retiring today would receive higher benefits than a person retiring last year or next year, he could be reasonably sure of receiving more than if he had invested the same amount of money in the traditional pay-as-you-go program. Of the 35 different 41-year periods the CRS studied, there is not one in which a worker who had invested his payroll taxes in stocks would have been better off remaining in the current system. On average, a personal account invested only in stocks would produce benefits two and one-half times higher than the traditional pay-as-you-go program.

A mixed portfolio of stocks and bonds was not always better than Social Security, but nearly always so. Of the 35 different 41-year periods studied, in 7 of them a worker would have been better off investing his payroll taxes in Social Security than in a 60-40 stock-bond portfolio, though the difference is small, an average of just 6 percent (Figure 6).

The relative weakness of a mixed portfolio during the 1970s is attributable to two factors. First, investment returns were low by historical standards, with a slow economy reducing

**Even if the government must incur costs to move the system to a sustainable basis, at the margin a worker would have been wise to opt for an account.**

**Figure 6**  
**Stock Returns Vary but Consistently Exceed Those of the Traditional Pay-As-You-Go Program**



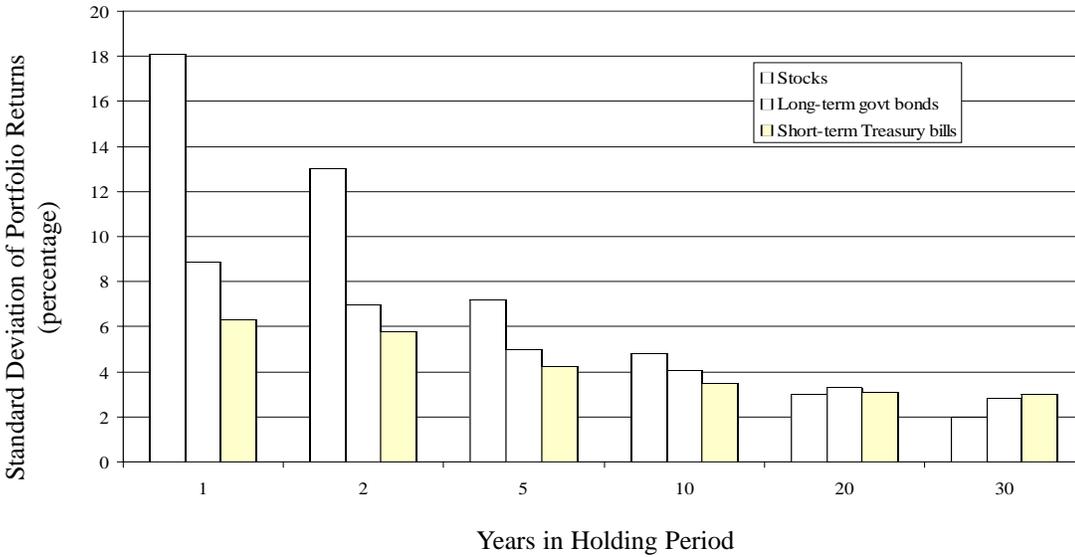
Source: Congressional Research Service, "Social Security Reform: The Effect of Economic Variability on Individual Accounts and Their Annuities," February 28, 2002.

**Table 1**  
**Personal Account Benefit as Multiple of Average Benefit from Pay-As-You-Go Program**

	Portfolio	
	Stocks Only	60 Percent Stocks/ 40 Percent Bonds
Average	2.60	1.39
Minimum	1.19	.80
25th percentile	2.15	1.13
50th percentile	2.51	1.41
75th percentile	2.96	1.64
Maximum	5.12	2.13

Source: Congressional Research Service, "Social Security Reform: The Effect of Economic Variability on Individual Accounts and Their Annuities," February 28, 2002.

**Figure 7**  
**Stocks Have Been Very Risky in the Short Term but More Stable over the Long Run**



Source: Jeremy J. Siegel, *Stocks for the Long Run* (New York: McGraw-Hill, 1998), p. 32.

stock returns and high inflation making real bond returns negative from 1970 to 1979. Second, Social Security paid substantially higher returns during that period than it does today or will in the future. Workers retiring in the 1970s received real annual returns from Social Security averaging around 10 percent. Future retirees can expect to receive returns of approximately 2 percent, depending on their income and marital status.<sup>17</sup> While low market returns are possible in the future, the current Social Security program can never again pay returns similar to those received during the 1970s and before.

Overall, as Table 1 shows, a 60-40 stock-bond portfolio would have paid an average of 39 percent more than Social Security, even compared to the higher rates of return the current program paid in the past. From the late 1970s onward, no individual—including individuals retiring today—would have been worse off with a personal account than he would have been had he remained in the current system. All workers would have received higher benefits by investing in personal accounts, even if their accounts contained a high pro-

portion of bonds, and many workers would have received much higher benefits.

These results may understate somewhat the returns from personal account plans such as those from the president’s commission, because the CRS assumed administrative costs of 1 percent of assets managed versus an estimate of 0.3 percent of assets managed by Social Security’s independent actuaries for the commission’s account structure. Over a 41-year working lifetime, a 0.7 percent increase in the net investment return would increase the final asset accumulation by slightly over 20 percent, further increasing the advantage of personal accounts over pay-as-you-go financing.

### Long-Run Market Risk

Another way to consider stock market risk is to compare the variations in returns over various holding periods. Figure 7, adapted from *Stocks for the Long Run* by Wharton School finance professor Jeremy Siegel, shows the standard deviation of returns for stocks, bonds, and Treasury bills held for different periods of time.

**A 60-40 stock-bond portfolio would have paid an average of 39 percent more than Social Security.**

**The true worst-case scenarios would not have involved stock investment but holding supposedly “safe” government bonds.**

The standard deviation measures the dispersion of statistical data, showing how much individual instances tend to vary from the average for the group.<sup>18</sup>

In the short run, the standard deviation of stock returns is very high, such that the return in one year could be very different from that of another. Fixed income investments, by contrast, have lower standard deviations and hence lower risk.

Over the long term, however, the standard deviation of stock returns has fallen. That is to say, the return from holding stocks for, say, 20 years does not vary so much, regardless of which 20-year period of American history you chose. For 30-year periods, the standard deviation of returns is lower still.

Moreover, for long holding periods the standard deviation of stock returns is actually lower than for bonds or Treasury bills. That is to say, in a certain sense at least, stocks were less risky over the long term than bonds. It is this reduction of the variance of returns over the long term that forms the basis for the time diversification and for the common advice for younger individuals to hold riskier investments.

## **Worst-Case Scenarios**

Opponents of personal accounts are quick to point out that, while stocks have high average returns,

the promise of guaranteed protection against poverty cannot be “averaged out” if some people feast on the rewards of a rich stock account while others cannot afford to eat. Social Security is supposed to be there for everyone, regardless of whether they have good luck or know how to manage investments.<sup>19</sup>

Hence, opponents of reform are justified in demanding that we look not just at the average returns available from personal accounts but also at how people would fare if they expe-

rienced low returns over their lifetimes.

Another way to look at stock investment for personal accounts, then, is to look at the extremes. If you had had a personal account and received below-average returns on your investments, how badly would you have fared?<sup>20</sup>

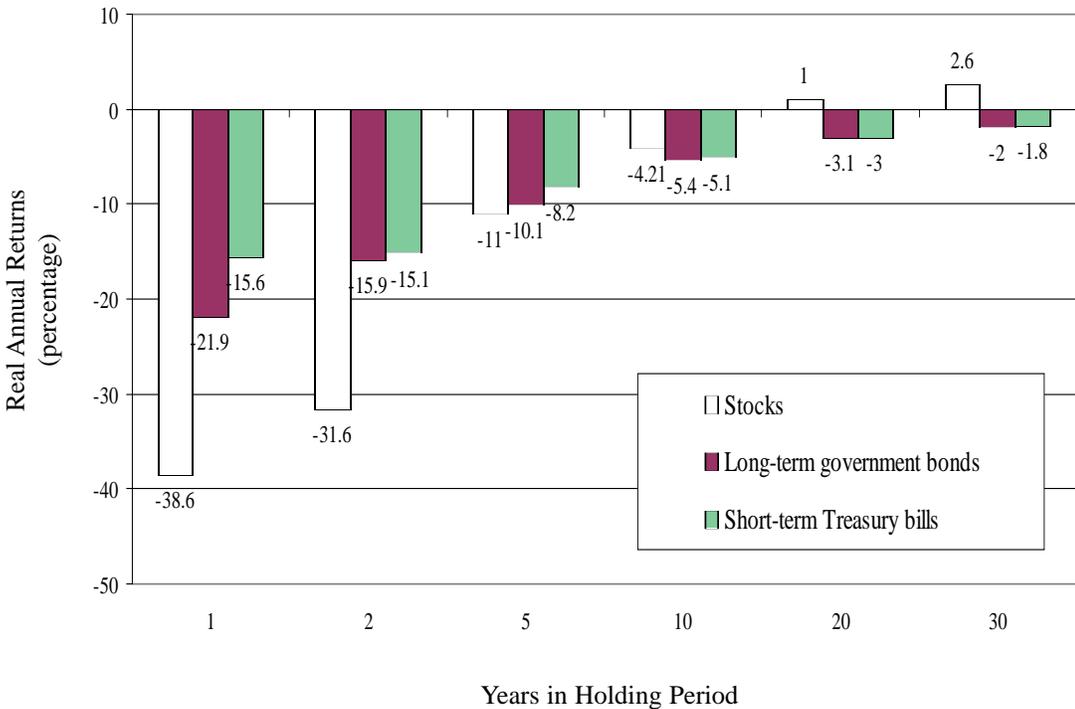
As expected, stocks have often produced large losses in the short term. For instance, over single-year holding periods, the worst performance from stocks in American history was a loss of 38.6 percent, as shown in Figure 8. The worst-case for bonds in a single year was a loss of 21.9 percent and for Treasury bills a loss of 15.6 percent.

Over the long term, however, annual gains and losses offset each other. When stocks were held for 10 years, the largest average annual loss was 4.2 percent after inflation. Over 20 years or more, however, stocks have never failed to produce positive returns, with the worst annual return being 1 percent. Over 30 years, the worst annual return from stocks was a gain of 2.6 percent after inflation.

Bonds actually produced lower worst-case returns over the long run than stocks. The worst 30-year return from bonds was an annual loss of 2 percent and for Treasury bills, a loss of 1.8 percent. In other words, the true worst-case scenarios would not have involved stock investment but holding supposedly “safe” government bonds.

Now, these figures assume that workers hold a diversified portfolio replicating the performance of the stock market as a whole.<sup>21</sup> A worker could lose his savings simply by investing his entire portfolio in one of the approximately 200 public corporations that declare bankruptcy in any given year.<sup>22</sup> It is precisely for this reason that all major personal account-based reform legislation mandates that workers not invest in single stocks or even in single corporate sectors. Workers with accounts could purchase only highly diversified mutual funds holding dozens, hundreds, or even thousands of stocks or bonds. Some reform plans base their account administration on the federal Thrift Savings Plan, which gives workers the option to invest in one or more of five stock or bond

**Figure 8**  
**Worst-Case Scenarios: Unlike Supposedly "Safe" Bonds, Stocks Have Never Lost Money over the Long Term**



Source: Jeremy J. Siegel, *Stocks for the Long Run* (New York: McGraw-Hill, 1998), p. 27.

index funds, coupling simplicity and extremely low administrative costs with high levels of diversification. Hence, while opponents of personal accounts cite the amount a worker might have lost by investing in the NASDAQ index, there is no existing reform legislation that would allow such an investment to take place.

In practice it would be next to impossible for an individual to lose his money. To illustrate, imagine a worker who could invest in either the S&P 500 stock index or in a fund of AAA rated corporate bonds. Each year, he moved his entire portfolio to the investment that would reap the lowest returns for that year. Even after making the worst investment choices possible, he, if retiring today, would still have had positive net returns on his portfolio as a whole.<sup>23</sup>

## Outstanding Issues

Despite the evidence of historical market returns, policymakers and the public should not treat equity investment for Social Security or other purposes as if it constituted "free money." Actuarial analysis of reform legislation can sometimes encourage this viewpoint: although the text rightly highlights issues of risk, the numbers that receive greater public attention often appear to treat stocks as if they were bonds with higher-than-average returns. Whether equity investment is envisioned through personal accounts or through a central government-managed fund, the market rewards people who are willing to take risk, even if diversification and long time horizons have historically ironed out the short-term fluctuations of the stock market.

**Despite the evidence of historical market returns, policymakers and the public should not treat equity investment as if it constituted "free money."**

**Table 2**  
**Since World War II, the Risk Premium Paid to Stocks Has Risen Sharply**

Period	Premium vs. Long-Term Govt. Bonds	Premium vs. Short-Term Treasury Bills
1802–1997	3.5	4.1
1802–1870	2.2	1.9
1871–1925	2.9	3.4
1926–1997	5.2	6.6
1946–1997	6.4	7.0

Source: Jeremy J. Siegel, *Stocks for the Long Run* (New York: McGraw-Hill, 1998), pp. 13, 15.

**Over long periods  
stock returns  
deviate substan-  
tially less from  
the average than a  
random walk  
would predict.**

Moreover, some observers believe that the equity premium—that is, the extra reward paid to holders of risky investments like stocks over safer investments like short-term bonds—could be smaller in the future than in the past. Historically, stocks have paid a “risk premium” of 6–7 percentage points over safer investments like short-term government bonds.<sup>24</sup> Longer-term bonds such as those held by the Social Security trust fund also receive a premium of about 1 percentage point over shorter-term bonds, primarily because of the increased risk of inflation eating away the real returns.<sup>25</sup>

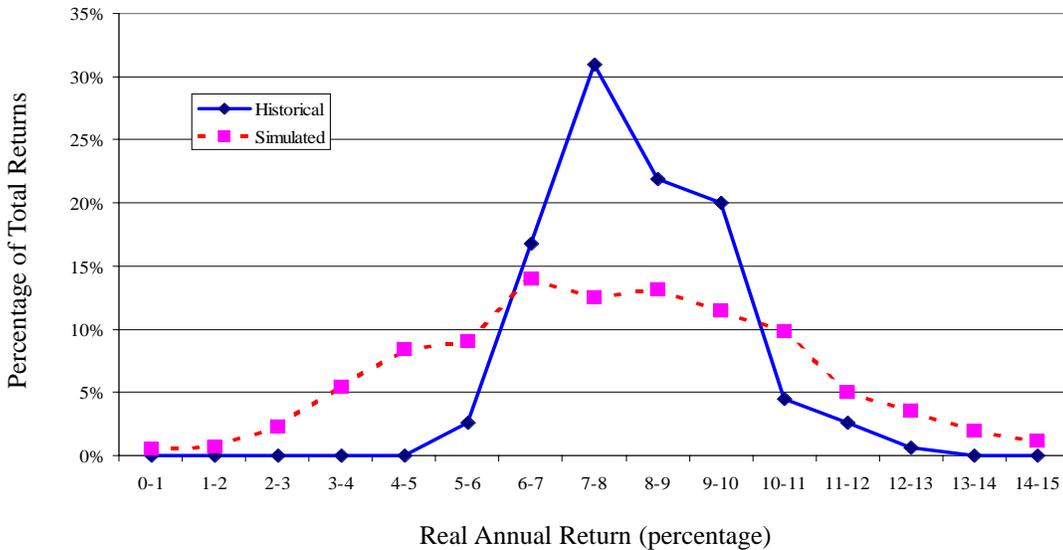
Some analysts believe that the relative increase in stock returns in recent decades (Table 2) reflects a reduction in the equity risk premium demanded by investors. Such a change in investor attitudes would increase returns in the near term, because the price of an asset will rise if investors perceive it to be less risky. Once the price had adjusted, however, the risk premium would be smaller than in the past.<sup>26</sup> While there is merit to this argument, it remains the case that stocks are far riskier than bonds in the short run and that the average share on the New York Stock Exchange today is

held for less than one year.<sup>27</sup> For shorter-term investors, a substantial risk premium continues to make sense.

A second current debate within the finance community regards the question of time diversification, the degree to which long holding periods reduce the risk of stock ownership. Zvi Bodie of Boston College argues that, contrary to accepted wisdom, the risk of owning stocks increases rather than decreases with time.<sup>28</sup> Bodie contends that the proper measure of the risk of a stock investment is the cost of a “put” option contract allowing the holder to sell the stock in the future at a price sufficient to guarantee a return no less than that paid by short-term government bonds.<sup>29</sup> Bodie applies the Black-Scholes formula used in pricing financial options, which give the holder the right to buy or sell an asset at a designated price in the future. Since under the Black-Scholes formula the cost of a put option increases over time, Bodie concludes that the cost of insuring against stock losses—and hence, the risk of stocks—increases the longer you hold them.<sup>30</sup>

One difficulty with Bodie’s thesis is that the Black-Scholes formula assumes that stock prices follow a “random walk,” that is, that a gain or loss in one period does not influence whether there

**Figure 9**  
**Over 45-Year Holding Periods, the Average Returns from Stocks Are More Constant Than a "Random Walk" Would Predict**



Note: Historical returns based on arithmetic mean return for 45-year holding periods, 1802–2001. Simulated returns are based on 1,000 instance random number generation with historical single-year mean return and standard deviation.

will be gains or losses in the following period. While that is true over the short time periods during which options are ordinarily issued, over long periods stock returns deviate substantially less from the average than a random walk would predict (Figure 9). Adjusting Bodie’s model to include the declining standard deviation of stock returns over time confirms conventional wisdom that time diversification can reduce the risk of holding equities.<sup>31</sup>

While this debate continues, financial advisers continue to recommend that equity investment increase along with time horizons, indicating continued belief that time diversification will smooth the short-term volatility of the stock market.

### **Public Opinion on Personal Accounts: Have Americans Lost Faith?**

Even workers retiring today, with the markets in turmoil, would have received high

total retirement incomes by virtue of holding a personal retirement account. But does the public still believe in personal accounts, or has negative publicity associated with the market decline caused Americans to lose faith in Social Security reform?

By coincidence, the Cato Institute commissioned a survey of public opinion on personal accounts for the period July 8–12, 2002, during which the Dow Jones Industrials Average fell almost 700 points and executives at WorldCom pleaded the Fifth Amendment in congressional hearings that were investigating corrupt corporate accounting methods. The survey, undertaken by the respected polling firm of Zogby International, would show the effect of these factors on public support for accounts.<sup>32</sup>

Despite all expectations, support for accounts remained strong: fully 68 percent of likely voters support the addition of voluntary personal accounts to Social Security. For perspective, in July 1999, when the Dow was almost 25 percent higher than today, only 54 percent of likely voters supported accounts.<sup>33</sup>

**Fully 68 percent of likely voters support the addition of voluntary personal accounts to Social Security.**

**Individual control is a recurring theme: voters cited it as the main reason for favoring personal accounts, even over higher benefits and the ability to pass on the account to their heirs.**

Despite the current market fluctuations, 55 percent of working-age voters today think personal accounts are less risky than the current system, which can remain solvent only with substantial tax increases or benefit reductions. By a two-to-one margin, likely voters think the lesson of the Enron scandal is that workers need more control over their retirement savings, including personal accounts for Social Security, not that markets are dangerous and that accounts shouldn't be allowed. By 62 to 22 percent, likely voters believe that if Social Security funds are to be invested privately, individuals rather than government should undertake and control that investment.

Individual control is a recurring theme: voters cited it as the main reason for favoring personal accounts, even over higher benefits and the ability to pass on the account to their heirs. (Not surprisingly, risk was the most cited reason for opposing personal accounts.)

Although politicians may have grown nervous as an election-year bear market gave their opponents ammunition for attack, the public appears to have remained strong and steady in its support of Social Security reform incorporating personal retirement accounts.

## **Conclusion**

Short-term investors are right to be concerned about short-term stock market volatility. Long-term investors, such as those saving for retirement, should focus more on long-term returns and long-term volatility. And over the time frames in which individuals would accumulate funds in their personal accounts, diversified investments in stocks and bonds remain a perfectly adequate means to prepare for retirement.

Indeed, a review of the evidence shows the hysterical reactions of personal account opponents to recent stock market declines to be wholly overblown. Most workers nearing retirement would have had relatively little exposure to stock market risk and thus would have experienced only small declines

in their account values. Most workers who would have had large proportions of their accounts invested in stocks would be young, with many years to make up for today's losses. Even workers who had invested entirely in stocks and who were retiring precisely when the market had fallen would still have received higher returns than the current Social Security program can produce. Historical evidence shows that even a worker retiring in 1933, when the Great Depression had dragged the stock market to its low, would still have received a 4 percent average annual return, twice what today's average worker can expect from Social Security.

Moreover, experience shows that workers can invest their assets wisely, taking into account stock market risk. In the 1980s and 1990s, millions of new investors entered the market as employers shifted from traditional defined-benefit pensions to employee-controlled defined-contribution accounts. Many of those new investors had little experience with stocks or bonds, but data show that generally they have made reasonable decisions about how to allocate their assets as they aged. Personal accounts would be designed with new investors in mind, ensuring low costs and adequate diversification so that inexperienced investors did not lose money because of high administrative fees or inappropriate reliance on just a few stocks.

Just as important, personal accounts give workers the opportunity to stay out of the stock market entirely if they so choose. They could invest only in corporate or government bonds and still receive higher benefits than by staying in the current program. This feature stands in contrast to plans in which the government itself would invest the Social Security trust fund in the stock market. Not only would such investment open the fund to political manipulation, but it would also make workers and retirees subject to stock market risk, whether they desired it or not.

Personal accounts are voluntary: no worker would be forced to choose one. Moreover, no worker with a personal account would be forced to invest even a penny in the stock

market. Given the relative safety of long-run diversified market investment, there is little reason that individual workers should not be allowed to choose.

Yes, the stock market is risky, and individuals should bear this risk in mind when making investment decisions. But while opponents of personal accounts trumpet the amount that accounts might have lost in the past 4 years, they decline to discuss how much workers would have gained over the past 40—not just in dollars, but in the security and dignity that come from ownership and control of one’s own retirement wealth.

## Notes

1. Sen. Tom Daschle (D-S.D.), Press conference with House Minority Leader Richard Gephardt (D-Mo.), Sen. Jon Corzine (D-N.J.), Rep. Robert Matsui (D-Calif.), and Rep. Charles Rangel (D-N.Y.) on Corporate Accountability and Social Security Privatization, July 12, 2002.

2. See, for instance, Matthew Rabin, “Inference by Believers in the Law of Small Numbers,” Economics Department, University of California, Berkeley, Working Paper E00-282. June 4, 2002, [www.repositories.cdlib.org/iber/econ/E00-282](http://www.repositories.cdlib.org/iber/econ/E00-282)

3. Gary Burtless, “Social Security Privatization and Financial Market Risk,” Center on Social and Economic Dynamics, Working Paper no. 10, February 2000, Figure 4, p. 28.

4. Workers generally have a number of different retirement assets; asset allocations for 401(k) accounts do not necessarily represent their total risk exposure, which could be higher or lower depending on the individual.

5. Robert L. Clark et al., “Making the Most of 401(k) Plans: Who’s Choosing What and Why,” in *Forecasting Retirement Needs and Retirement Wealth*, ed. Olivia S. Mitchell, P. Brett Hammond, and Anna M. Rappaport (Philadelphia: University of Pennsylvania Press, 2000), pp. 95–138.

6. Assuming it was annuitized at the government bond rate of return.

7. James Flanigan, “Nest Eggs Cushioned from Market’s Drop: Retirement, Diversified Investments Have Kept Pensions from Falling As Far As Key Stock Indexes,” *Los Angeles Times*, July 26, 2002, p. A1.

8. Ibid.

9. Two of the three proposals from the president’s commission, which are analyzed in Figure 5, advocate personal accounts investing roughly 3 percent of wages. For uniformity of analysis, 3 percent accounts are used in this chart as well, though there would be no qualitative difference in analyzing an account investing a larger portion of the payroll tax.

10. This idea of Social Security wealth is helpful in comparing the monthly retirement benefits that the current system could produce relative to personal accounts. However, contributions to Social Security do not produce wealth in a conventional sense. Unlike money in a personal account, a worker cannot pass on the money paid into Social Security, nor does he have legal ownership or control over it.

11. Orlo R. Nichols, Michael D. Clingman, and Milton P. Glanz, “Internal Real Rates of Return under the OASDI Program for Hypothetical Workers,” Social Security Administration, Office of the Chief Actuary, Actuarial Note no. 144, June 2001.

12. For more information on proposals from the president’s commission, see Andrew G. Biggs, “Perspectives on the President’s Commission to Strengthen Social Security,” Cato Institute Social Security Paper no. 27, August 22, 2002.

13. This point is worth noting, because some people argue that straightforward comparisons between the return paid by a pay-as-you-go system like Social Security and the return from a funded system are not always appropriate, in that the first generation entering the funded system must honor the benefit obligations amassed under the pay-as-you-go program. See John Geanakoplos, Olivia S. Mitchell, and Stephen P. Zeldes, “Would a Privatized Social Security System Really Pay a Higher Rate of Return?” National Bureau of Economic Research, Working Paper no. 6713, August 1998. Nevertheless, this fact does not render meaningless the comparisons that are based on market returns. The change in the average return under a reformed system depends in large part on how the transition to personal accounts was financed—doing so by increasing taxes would likely lower net returns, by reducing other government spending would likely increase returns, and by issuing debt would leave returns unchanged. Nevertheless, comparison of market returns to the offset interest rates incorporated in reform proposals shows that at the margin returns would increase. Hence, individuals faced with the option of investing part of their payroll taxes in an account could be reason-

ably assured of increasing their returns from Social Security as a whole by doing so.

14. See, for instance, Bob Kerrey and Warren Rudman, "Social Security Shell Game," *Washington Post*, August 12, 2002, p. A15.

15. Assuming that the offset interest rate, as used in the commission proposals, equaled the interest rate earned by the Social Security trust fund (assumed to be 3 percent annually after inflation). Two commission plans have offset interest rates below the trust fund rate, which can be accomplished as other measures in the plan bring the traditional system to solvency. The commission's model 1 has an offset interest rate above the trust fund rate, which means that account holders are effectively subsidizing the traditional system (even if account holders themselves would also receive higher benefits by virtue of choosing an account).

16. Congressional Research Service, "Social Security Reform: The Effect of Economic Variability on Individual Accounts and Their Annuities," February 28, 2002.

17. U.S. General Accounting Office, "Social Security: Issues in Evaluating Rates of Return with Market Investments," August 1999, p. 6.

18. Assume that for a set of values  $a_1, a_2, a_3, \dots, a_n$ , the mean (or average) value is designated  $m$ . The deviation of each value from the mean is  $|m - a_1|, |m - a_2|, \dots$ . The standard deviation of the set is the square root of the mean of the squares of these deviations, i.e.,  $[(|m - a_1|^2 + \dots + |m - a_n|^2)/n]^{1/2}$ . When a set of values is normally distributed in a bell-shaped curve, 68 percent of the data points will rest within one standard deviation of the mean, 95 percent within two standard deviations, and 99.7 percent within three standard deviations. Hence, if the standard deviation of stock returns over 30-year holding periods is 2 percentage points with a mean return of 7 percent after inflation, we can assume that roughly two-thirds of the returns are between 5 and 9 percent and only 1 in 20 is either less than 3 or greater than 11 percent.

19. Hans Riemer, Campaign for America's Future/2030 Center, Testimony before the President's Commission to Strengthen Social Security, October 18, 2001.

20. More detailed analysis is contained in Melissa Hieger and William Shipman, "Common Objections to a Market-Based Social Security System: A Response," Cato Institute Social Security Paper no. 10, July 22, 1997.

21. Individuals can purchase such a diversified

portfolio at low cost via funds tracking the Wilshire 5000 index, which tracks the prices of all U.S.-headquartered equity securities with readily available price data (now numbered at slightly over 6,300, though the "5000" moniker remains).

22. BankruptcyData.com.

23. The arithmetic mean return would equal approximately 0.7 percent annually.

24. 1999 Technical Panel on Assumptions and Methods, "Report to the Social Security Advisory Board," November 1999, p. 27, [www.ssab.org](http://www.ssab.org). Since World War II, the equity premium has increased. Several factors may account for this rise. First, following the Great Depression investors demanded a higher premium for stocks in compensation for the higher perceived risks they were undertaking. Hence, stock returns from 1946 to 1997 averaged 7.5 percent after inflation, 0.5 percentage points higher than the average since 1802.

25. At the same time, rising inflation reduced the real returns from fixed income investments such as bonds. The consumer price index rose at an annual rate of 4.3 percent from 1946 to 1997, versus a 1.3 percent annual rise throughout American history. The effect of inflation was to reduce the real return from short- and long-term bonds to 0.5 and 1.1 percent annually, versus their historical returns of 2.9 and 3.5 percent after inflation. Jeremy J. Siegel, *Stocks for the Long Run* (New York: McGraw-Hill, 1998), p. 15. In the absence of historical events such as the depression and postwar inflation, one could expect that the equity premium would return to something closer to its historical average.

26. A 2000 survey of 226 financial economists found an average forecast for the equity risk premium over the next 30 years of roughly 5 percent, with pessimistic- and optimistic-case forecasts at 2-3 percent and 12-13 percent, respectively. Ivo Welch, "Views of Financial Economists on the Equity Premium and Other Issues," *Journal of Business* 73, no. 4 (October 2000): 501-37. The average of the economists' forecasts was an arithmetic mean equity premium of 7 percent; given historical volatility, this number translates to a geometric mean equity premium of roughly 5 percent. The Technical Panel to the independent Social Security Advisory Board recommended an equity premium of 3 percent over the 3 percent real return assumed for the bonds in Social Security's trust fund, thus implying 6 percent real annual returns from equities in the future. 1999 Technical Panel on Assumptions and Methods, p. 27. Social Security's own independent actuaries assume a 6.5 percent real annual return from equities over the long run. For details, see Stephen

C. Goss, "Equity Yield Assumptions Used by the Office of the Chief Actuary, Social Security Administration, to Develop Estimates for Proposals with Trust Fund and/or Individual Account Investments," in "Estimating the Real Rate of Return on Stocks over the Long Term," report to the Social Security Advisory Board, August 2001.

27. The *Dow 36,000* thesis takes this widely accepted premise to its extremes. Authors Glassman and Hassett argue that because stocks are no more risky over the long run than bonds, rational investors should be willing to pay the same for stocks as they would for bonds producing a similar cash flow. Once the correct price had been reached—36,000 for the Dow Jones Industrials Index, the authors speculate—stocks would produce long-term returns similar to those of bonds. Hence, a larger equity premium (and higher returns) in the short term followed by a smaller premium (and lower returns) in the long term. See James K. Glassman and Kevin A. Hassett, *Dow 36,000: The New Strategy for Profiting from the Coming Rise in the Stock Market*, 1st ed. (New York: Times Business, 1999). An abridged version of the argument is available at [www.theatlantic.com/issues/99sep/9909dow.htm](http://www.theatlantic.com/issues/99sep/9909dow.htm).

28. Source: New York Stock Exchange statistics archive.

29. See Zvi Bodie, "On the Risk of Stocks in the Long Run," *Financial Analysts Journal* 51, no. 3 (May–June, 1995): 18–22.

30. A "put" option allows the holder to sell an asset at a designated price at a designated time in the future. A "call" option allows the holder to purchase an asset at a designated price at a designated time. So-called European puts and calls allow the sale only at the precise time designated; American puts and calls allow the sale at any time prior to the designated date. Bodie's analysis assumes the use of European options.

31. Bodie is clearly correct that, on the one hand, the degree of *possible* losses increases over the long term, if we assume that repeated annual losses compound year after year. On the other hand, if the standard deviation of stock returns declines over time, then longer holding periods should

tend to average out gains and losses. Hence, while a longer holding period increases the likelihood of a single disastrous year of stock returns, it also increases the time available for recovery.

32. Taylor and Brown argue that Bodie inappropriately "assumes that the annualized standard deviation of 20 percent is appropriate for all holding periods. This assumption of a constant annualized standard deviation of returns across all time horizons ensures that he will get the answer he desires." Richard Taylor and Donald J. Brown, "On the Risk of Stocks in the Long Run: A Note," *Financial Analysts Journal* 52, no. 2 (March–April 1996): 69–71. Ferguson and Leistikow counter Bodie's argument in a somewhat different way. Bodie imagines a put option allowing the holder to sell a stock at a future date for the same price at which he could sell a short-term bond, thus assuring the holder of at least the risk-free rate of return. Because Bodie's formula showed the price of this option rising over time, he concluded that the risks of holding equities similarly rose with time. Ferguson and Leistikow imagine a similar but opposite option: a call option that allowed the holder of a risk-free asset to sell it at a future date for the same price as a stock. If an option enabling one to sell the stock at the bond price rose in price over time, one would assume that an option enabling one to sell a bond at the stock price would fall over time. But under Bodie's methodology, the bond-for-stock call option would rise in price over time, just as the stock-for-bond put option did. This counterintuitive result, Ferguson and Leistikow argue, "justifies a reexamination of Bodie's methodology and conclusions." Robert Ferguson and Dean Leistikow, "On the Risk of Stocks in the Long Run: A Comment," *Financial Analysts Journal* 52, no. 2 (March–April 1996): 67–68. See also, Mike Dempsey et al., "On the Risk of Stocks in the Long Run: A Resolution to the Debate?" *Financial Analysts Journal* 52, no. 5 (September–October 1996): 57–62.

33. Cato Institute/Zogby International, conducted July 8–12, 2002. Sample size: 1109, margin of error:  $\pm 3.1$  percent, [www.socialsecurity.org/zogby/zogby-2001.pdf](http://www.socialsecurity.org/zogby/zogby-2001.pdf).

34. Cato Institute/Zogby International, conducted July 29–August 2, 1999. Sample size: 1,205, margin of error:  $\pm 3\%$ , [www.socialsecurity.org/zogby/fullreport.pdf](http://www.socialsecurity.org/zogby/fullreport.pdf).

Published by the Cato Institute, Cato Briefing Papers is a regular series evaluating government policies and offering proposals for reform. Nothing in Cato Briefing Papers should be construed as necessarily reflecting the views of the Cato Institute or as an attempt to aid or hinder the passage of any bill before Congress. Additional copies of Cato Briefing Papers are \$2.00 each (\$1.00 in bulk). To order, or for a complete listing of available studies, write the Cato Institute, 1000 Massachusetts Avenue, N.W., Washington, D.C. 20001, call (202) 842-0200 or fax (202) 842-3490. Contact the Cato Institute for reprint permission.