

Investment Choices by Individuals

Many people tend to invest conservatively in low-risk, low-return investments when they control their own retirement funds. Three existing vehicles for retirement investment--401(k) plans and the self-directed retirement funds for federal workers and for teachers and professors--tend to be heavily invested in fixed-income securities such as bonds and guaranteed investment contracts (GICs) that invest in a fixed-interest contract with an insurance company. Higher-return but higher-risk investments such as equities or stock mutual funds seem to be less favored.

Investment choices by IRSA holders could differ. But if this preference for low-risk, low-return investments continues, individual choice is unlikely to increase the resources available to baby boomers in retirement as long as national saving does not change much. Assets in IRSAs, if conservatively invested, would probably not earn much higher returns than currently accrue to the trust fund, and some individuals might find that their market rate of return was in fact below what they had expected and planned for.

401(k) Plans. In 1989, the average equity share in all 401(k) plans was 21 percent, although different design features of the plans affect this number.¹⁰ Plans that provide incentives for participants to invest at least a portion of the overall contribution in the employer's securities (sometimes referred to as KSOPs) had 30 percent of total assets invested in equities.

Interestingly, employees are more conservative than employers. In a 1993 survey of 480 401(k) plans, 89 percent of the plans allowed employees to invest their contributions in traditional equity investment options such as growth and income, growth, or equity index mutual funds.¹¹ But only one-fifth of the employee balance--that is, the total assets contributed by employees or generated from earnings on those contributions--was invested in such funds, with an additional one-quarter of the employee balance in employer stock (see Table 1).

By contrast, employer contributions were tilted much more toward equity investments, though largely in the stock of their own firms. In more than two-

10. Jack L. VanDerhei, "New Evidence That Employees Choose Conservative Investments for Their Retirement Funds," *Employee Benefit Notes* (February 1992). A Congressional Budget Office tabulation of Form 5500 data from 1990 shows that the percentage of assets in equities has risen slightly to 24.5 percent of total assets. See Department of Labor, "Abstract of 1990 Form 5500 Annual Reports," *Private Pension Plan Bulletin* (Summer 1993), Table D5.

11. Hewitt Associates, *401(k) Plan Hot Topics, 1993* (Lincolnshire, Ill.: Hewitt Associates, 1993).

TABLE 1. ASSET MIX OF SURVEYED 401(K) PLANS IN 1993
(In percent)

	Employee Balance	Employer Balance
Money Market Funds	4	4
Guaranteed Investment Contracts	33	11
Diversified Fixed-Income Securities	6	3
Bonds	5	4
Balanced Funds	3	6
Traditional Equities	20	12
Employer Stock	25	59
Other	4	1

SOURCE: Hewitt Associates, *401(k) Plan Hot Topics, 1993* (Lincolnshire, Ill.: Hewitt Associates, 1993).

NOTE: Employee balance refers to total assets contributed by employees or generated from earnings on those contributions. Employer balance refers to total assets contributed by employers or generated from earnings on those contributions.

thirds of the surveyed plans, employer contributions were permitted to be invested in equity investment options. Yet, of the employer balance, one-eighth was in traditional equity investments, whereas three-fifths was in employer stock. Conservative investment choices such as guaranteed investment contracts, money market funds, and diversified fixed-income funds made up much of the remaining shares of both employee and employer balances.

Thrift Savings Plan for Federal Employees. Federal employees have a Thrift Saving Plan (TSP) program that is similar in many respects to 401(k) plans. Although TSP balances continue to be heavily invested in fixed-income funds, the flow of contributions shows a steady shift toward equities. The TSP program began operations in 1987. At the end of August 1994, more than 2 million individuals had TSP accounts with investments amounting to \$24 billion. Of this total, 70 percent was in government securities, 24 percent was in the equity fund, and 6 percent was invested in the bond fund.¹²

12. Allocations of amounts in the three funds reflect restrictions on investment choices that were in place until January 1991. In 1988, 80 percent of the employee contribution was restricted to the government bond fund. This restriction was reduced to 60 percent in 1989 and to 40 percent in 1990. Beginning in January 1991, participants were free to allocate both the employee and the employer contribution as they wished among the three funds.

More recently, however, TSP participants have moved sharply toward equity investments.¹³ In January 1991, more than 93 percent of monthly TSP contributions went to the government securities fund and only about 5 percent to the equities fund. But in August 1994, the most recent month for which data are available, only 55 percent of monthly contributions were allocated to the government securities fund. About 35 percent went to the equity fund, and 10 percent went to the bond fund. TSP participants have a lower percentage going into stock funds than do 401(k) participants, perhaps because they cannot purchase an employer's stock, as can 401(k) participants. Yet a trend toward higher-risk assets is clearly evident.

TIAA-CREF Allocations. Allocations to the Teachers Insurance and Annuity Association-College Retirement Equities Fund (TIAA-CREF) illustrate how contributions might be split between stock and bond funds in long-established retirement funds. TIAA-CREF now holds about \$130 billion in its portfolio, and monthly allocation choices since 1990 suggest that well-educated contributors tend to give higher allocations to equity funds.¹⁴ In April 1990, about 39 percent of monthly allocations went to CREF equity funds. By April 1994, that percentage had risen to 51 percent. The recent addition of a social choice equity fund and a global equity fund may explain some of the increase, but education efforts and the strong performance of equities markets until March 1994 probably deserve some of the credit as well.

Of course, the experience of 401(k) plans, the TSP program, and TIAA-CREF may not accurately predict how IRSA holders would invest for two reasons. First, individuals may have special reasons to invest their employer-sponsored retirement accounts in specific types of assets. Political pressures could cause some people to invest or not to invest in certain securities, as was evident in the boycott of investments in South Africa. The tax-deferred nature of employment-based retirement plans may also push investment choices toward assets that would be more heavily taxed to individuals in the current year.

Second, people with 401(k)s or federal workers and teachers and professors with self-directed retirement funds may have different preferences and different retirement portfolios than the general population. They may be willing to take more risk in return for higher rates of return. In addition, the

13. Tom Trabucco, Director of External Affairs, Federal Retirement Thrift Retirement Board, kindly provided the data on monthly contributions.

14. Communication from P. Brett Hammond, Director of Strategic Research, TIAA-CREF, New York, N.Y. Monthly allocations include contributions to retirement accounts as well as to supplemental retirement accounts. Allocations to the CREF money market and bond funds are not included as equity allocations.

retirement funds may represent only a portion of their retirement saving portfolio, while IRSAs could represent all retirement savings for some people. Because of such differences, only cautious inferences can be drawn about what investment choices the general population might make if IRSAs were available to everyone.

Historical Returns on Investment Portfolios

How individuals chose to invest their Social Security contributions would significantly affect the amount of resources available to them in retirement. Although future returns are uncertain, the historical returns on stocks, corporate and government bonds, and Treasury bills indicate the possible range of future relative returns. The volatility of returns suggests varying degrees of risk.

Between 1926 and 1987, stocks were by far the best long-term investment on average. Common stocks earned a compound average return equal to 9.9 percent a year in nominal terms over that period, whereas the compound annual return for long-term corporate bonds was only half as high (see Table 2). Among government securities, the average return on long-term government bonds lay somewhat below that of long-term corporate bonds, and U.S. Treasury bills with maturities of less than one year showed an even lower average return that beat inflation by only a small margin.

The riskiness of each of these broad categories of investments, however, varies with the average compound rate of return. In other words, categories with higher average total returns are more likely to show rates of return in any one year that are substantially above or below the average for the period.

TABLE 2. RETURN AND STANDARD DEVIATION ON BROAD INVESTMENT CATEGORIES OVER VARIOUS TIME PERIODS (In percent)

	Compound Annual Return			Standard Deviation, 1926-1987
	1926-1987	1948-1967	1968-1987	
Common Stocks	9.9	14.6	9.3	21.1
Long-Term Corporate Bonds	4.9	2.0	7.9	8.5
Long-Term Government Bonds	4.3	1.4	7.3	8.5
Treasury Bills	3.5	2.4	7.4	3.4
Inflation	3.0	1.9	6.3	4.8

SOURCE: Roger G. Ibbotson and Rex A. Sinquefeld, *Stocks, Bonds, Bills, and Inflation: Historical Returns, 1926-1987* (Chicago: Dow Jones-Irwin, 1989), Exhibits 19 and 24-C.

NOTES: The standard deviation of the compound annual return is a measure of risk. In one-third of the years, the compound annual return was more than one standard deviation above or below the average return. For example, in one-third of the years between 1926 and 1987, the return on common stocks lay below minus 11.2 percent or above 31 percent. Inflation is measured using the consumer price index.

For example, the standard deviation of total returns on stocks is 21.1 percent. This standard deviation means that in one-third of the years from 1926 through 1987, the annual total return on common stocks was likely to be higher than 31 percent or lower than minus 11.2 percent. For investors with a low tolerance for risk, a high standard deviation may indicate more rough sledding than they can accept.

Conversely, U.S. Treasury bills show relatively little risk. The standard deviation on Treasury bills was just 3.4 percent, meaning that in two-thirds of the years from 1926 to 1987, the annual total return on Treasury bills was likely to be between 0.1 percent and 6.9 percent. Losses in any individual year were rare. Investors obtain more reliable--though lower--rates of return when they invest in short-term securities of the federal government.

Corporate securities are riskier than government securities in another respect--they are far more heterogeneous. Treasury securities differ only by their maturities and coupons, but corporate securities require a whole range of additional considerations: whether the company is well managed, its market position, and so on. All of these factors affect dividends, stock prices, bond prices, and thus the return of a particular portfolio of securities. The impact of this risk can be reduced by diversification--by holding a widely spread portfolio of securities with different characteristics so that gains in one area will offset losses in another. But diversification may be hard to achieve

in a small portfolio, such as an individual IRSA. Indeed, investing IRSAs only in direct holdings of primary securities--stocks and bonds--would expose their holders to unnecessary risk.

The most obvious way for a small investor to diversify is to buy, not primary securities, but shares in a large, diversified portfolio--a mutual fund. But even these large portfolios do not generally eliminate all diversifiable risk, since they have distinctly different records. Only by investing in index funds could investors avoid risks not associated with the overall market.

To illustrate the possible range of returns for individual investors who invest in common stocks through mutual funds, CBO calculated compound total returns on the top 10 percent and the bottom 10 percent of mutual funds that invested in common stocks over the 1984-1993 period.¹⁵ During that particular period, the compound total return for those funds with yields in the top 10 percent of stock mutual funds was 18.4 percent a year, with a standard deviation of 18.1 percent. The standard deviation in this case is calculated using monthly data. In other words, in one-third of the months, the annualized total return was more than one standard deviation above or below the average total return. The compound total return for those funds with returns in the bottom 10 percent of stock mutual funds was 5.2 percent, with a standard deviation of 26.8 percent.

Such a range of returns means that investors could have had very different experiences had they invested their Social Security contributions in stock mutual funds during the 1984-1993 period. A lucky investor, who earned an average annual return of 18.4 percent, would have seen an initial \$1,000 investment burgeon to \$5,414. An unlucky investor, who earned just 5.2 percent a year on average, would have had an initial \$1,000 investment grow to only \$1,660. Moreover, the unlucky investor would have had a much greater probability of negative returns in any one month.

Until early this year, mutual funds investing in bonds performed especially well as interest rates fell unexpectedly. For the 1984-1993 period, bond mutual funds in the top 10 percent earned a compound total return of 12.7 percent a year with a standard deviation of 6.8 percent. The total return for the bottom 10 percent of bond funds was actually higher than that for the bottom 10 percent of stock funds and had a much smaller standard deviation

15. Morningstar Mutual Funds OnFloppy (Chicago, Ill., March 1994). The Congressional Budget Office weighted the returns by the mutual fund's net asset value so that relatively small funds receive less weight in calculating the average rate of return.

as well. The compound total return was 7.0 percent a year with a standard deviation of 2.2 percent.

Recent performance of bond funds illustrates the rather wide swings that can occur over short periods of time. During March and April of 1994, as interest rates jumped, bond funds typically lost 10 percent or more of their value. Although such losses could scare off many investors, the yearly performance of well-managed funds is unlikely to exhibit such volatility.

Some bond mutual funds that sought to achieve their investment objectives through active use of derivatives--financial instruments whose value is based on primary securities--suffered even larger losses earlier this year. For example, derivatives based on home mortgages lost value quickly as rising interest rates caused homeowners to repay their mortgages more slowly than anticipated.

Clearly, the experience of workers whose retirement funds are invested in IRSAs is likely to be widely disparate. Even among those who use mutual funds to diversify their investments, some will do very well and others will not keep up with inflation. Moreover, the outcomes for some could be even worse than the weakest experience described here, since the mutual funds that had the worst performance over the past 10 years probably went out of business and are thus not even reflected in the data. Workers who purchase securities directly will be exposed to even greater risk.

Ways do, however, exist to minimize the risk--for instance, rules might specify that IRSAs could be invested only in very broad index funds. But such rules would also reduce the possibility of high returns and would give individuals little latitude in managing their retirement assets, thus undermining one of the goals of privatization proposals.

Other Types of Risk Associated with Individual Retirement Savings Accounts

Benefits received from an individual retirement savings account would depend not only on the rate of return earned on the account but also on the value of the annuity that could be purchased at the time of retirement and on the administrative costs associated with maintaining the accounts.¹⁶

16. For example, retirees might want to purchase annuities that include survivor benefits or inflation protection. For a discussion of the issues involved in indexed annuities, see Zvi Bodie, "Inflation Insurance," *Journal of Risk and Insurance* (December 1990), pp. 634-645.

Unlucky market timing at the point that the IRSA is converted into a stream of payments could present risk unrelated to the average rate of return earned during one's working years. If the stock market suffered a setback at the time of a person's retirement, for example, a large share of the gains earned over many years could be lost. Rules allowing partial conversion of the IRSA into an annuity over a period of time would ameliorate such risk. Careful financial planning for retirement during one's working years could also reduce the risk.

Administrative headaches from keeping track of thousands of individual accounts and the firms that must remit the payments for the accounts represent yet another type of risk. Administrative burdens could result in relatively large costs stemming from the many investment choices among individuals, the small sums of money involved, and the obligations to keep individuals informed about their accounts. High administrative costs could eat away at annual earnings on IRSAs (as, in an extreme case, they do in Chile).

Administrative burdens might be particularly onerous for the smallest accounts. Under some approaches, firms need not pay into an individual's account until the accumulated savings reach some limit. But how those funds are invested in the meantime, and what happens if the firm ceases to exist or fails to make good on the payments, is not at all clear.

WOULD INDIVIDUAL RETIREMENT SAVINGS ACCOUNTS BE INCONSISTENT WITH SOME OF THE GOALS OF THE SOCIAL SECURITY SYSTEM?

Benefits under the Social Security system are determined by a complex system that seeks a balance between equity and ensuring an adequate level of benefits even to the poorest recipients.¹⁷ At least implicitly, moving to IRSAs would alter this balance. The amount of retirement income derived from funds invested in an IRSA would be determined by the amount invested and the rate of return on that investment. That payout scheme is quite different from the benefit structure under current law. It would be equivalent to moving to a defined contribution plan, instead of a defined benefit plan.

The benefit formula itself exemplifies the mixture of goals in the current Social Security system. To help achieve equity, a link exists between what individuals pay while working and what they subsequently receive when they

17. This theme is developed by Martha Derthick in *Policymaking for Social Security* (Washington, D.C.: Brookings Institution, 1979). See, especially, Chapter 10.

retire or become disabled--regardless of their needs. In general, workers who pay more Social Security taxes will receive more Social Security benefits. However, the formula is progressive rather than proportionate, so that replacement rates--the ratio of retirement benefits to preretirement wage incomes--are generally higher for workers with low-wage histories than for well-to-do workers. That progressivity reflects the goal of providing benefits to people in need of assistance.

A major concern raised by opponents of approaches that include IRSAs is that individual accounts could undermine the progressive benefit structure of the Social Security system.

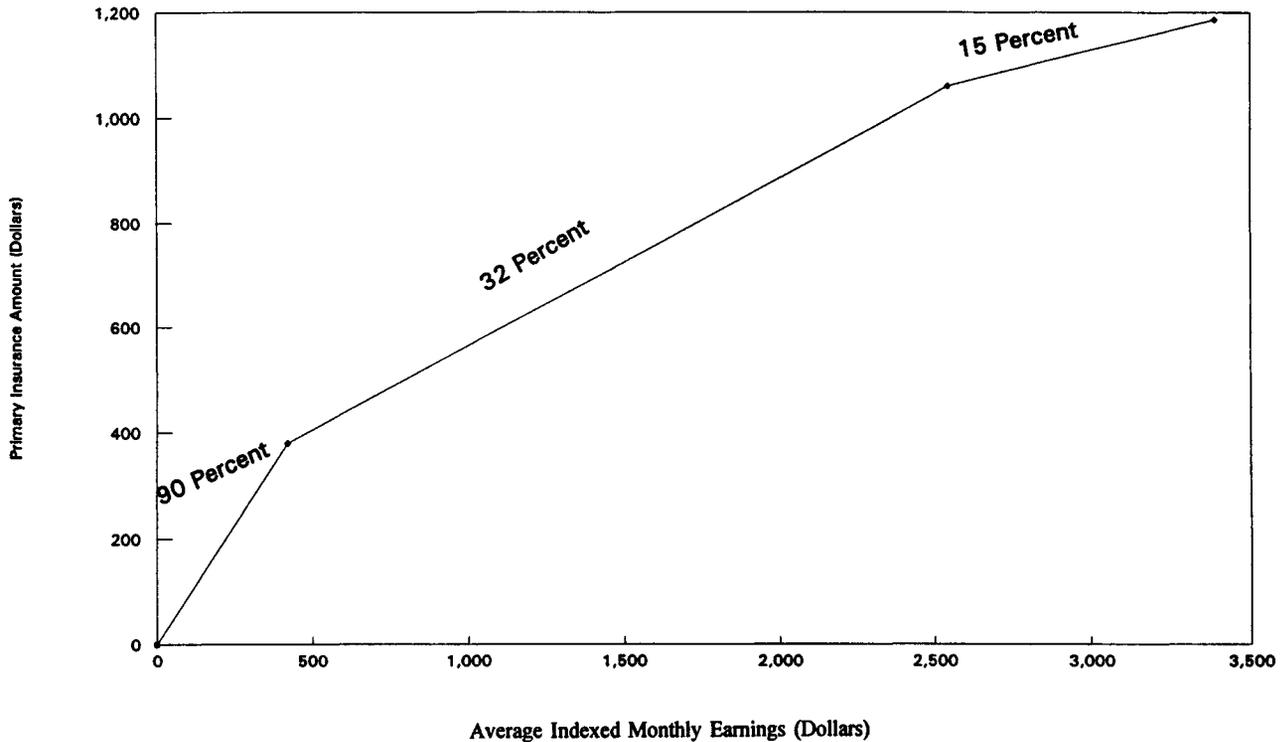
Current Benefit Structure

Benefits of retired (and disabled) workers are based on their earnings histories, expressed as an average level of earnings over their working lifetimes known as the average indexed monthly earnings (AIME). From this average, a formula is used to calculate a worker's primary insurance amount (PIA), which is then adjusted for a number of factors, such as reductions for early retirement, credits for later retirement, and increases for inflation.

A worker's AIME is based on wages earned in covered employment, with some adjustments. All earnings on which a retired worker paid Social Security taxes from 1951 to the year he or she turns 60 are "wage indexed" to compensate for past inflation and real wage growth. To accomplish this adjustment, each year's earnings up to the maximum subject to the Social Security tax are multiplied by an "indexing factor," which equals the ratio of the average national wage in the year the worker turns 60 to the average national wage in the year to be indexed. Earnings when an individual is age 60 or older are entered without being indexed. From this set of earnings, the highest 35 years are selected, added together, and divided by 420 (the number of months in 35 years). The result is the AIME.

To convert the AIME to a worker's PIA, a formula is applied that is progressive in the sense that it is designed to provide benefits that are a higher proportion of preretirement earnings for people with low average earnings than for those with higher earnings. That formula largely reflects a perception that relatively high replacement rates are necessary for those with relatively low earnings to provide them with adequate retirement incomes (see Figure 1 for an illustration of the formula).

FIGURE 1. PRIMARY INSURANCE AMOUNTS IN RELATION TO AVERAGE INDEXED MONTHLY EARNINGS UNDER CURRENT LAW, FOR WORKERS WHO TURNED AGE 62 IN 1994



SOURCE: Congressional Budget Office.

NOTE: For workers in this cohort who retired at age 65 (in 1997), the Primary Insurance Amount would be based on the formula illustrated in this figure, with the amounts increased by the cost-of-living adjustments effective in 1994, 1995, and 1996.

Under the formula, Social Security benefits replace 90 percent of the first part of a worker's AIME. But for subsequent portions of the AIME, the proportion falls--first to 32 percent and finally to 15 percent. For workers who reached age 62 in 1994, the formula is as follows: a worker's PIA equals 90 percent of the first \$422 of the AIME, plus 32 percent of the AIME between \$423 and \$2,545, plus 15 percent of the AIME over \$2,545. The points at which the percentage of the AIME replaced by the PIA changes (known as "bend points") are indexed to average annual earnings for the labor force as a whole. Consequently, as wages rise over time, average replacement rates are maintained.

In general, workers receive 100 percent of their own PIA in benefits if they first receive benefits at the age of full retirement, which is currently 65. The benefit is reduced if they retire earlier. For example, a worker who retires at age 62 receives a 20 percent reduction. Similarly, a credit is given for later retirement. Beginning with the age of initial eligibility (62 for retired workers), the PIA is increased each year for inflation.

In addition, spouses and other survivors of workers may be eligible for benefits based on the worker's PIA. The rules are complicated. However, elderly spouses of retired workers are usually eligible for benefits equal to 50 percent of the worker's PIA, and elderly widows and widowers are eligible for benefits equal to 100 percent of the deceased worker's PIA. Spouses who are also eligible for benefits as workers based on their own earnings records in effect receive the higher of the two benefits to which they are entitled. Various other provisions in the law and in regulations determine benefits paid in the case of divorce, retirement before age 65, employment after initial retirement, and common-law marriages.

The progressive benefit formula, spousal benefits, survivor benefits, and the longer life spans of women combine to produce striking differences among groups in projected Social Security benefits and taxes. For example, some analysts estimate that inflation-adjusted rates of return among early baby boomers, based on both the employee and the employer portions of the OASI payroll tax, would range from close to zero for high-earning workers who never married to over 4 percent for low-earning married men whose wives never worked for pay.¹⁸

18. C. Eugene Steuerle and Jon M. Bakija, *Retooling Social Security for the 21st Century: Right and Wrong Approaches to Reform* (Washington, D.C.: Urban Institute Press, 1994), Table A.3, p. 277. The estimates cited are for workers born in 1950. The estimated rates of return for high-earning single males and for single females were 0.03 percent and 0.94 percent, respectively. The rate for low-earning husbands with wives not entitled to benefits as workers was 4.41 percent. For workers born before 1950, the estimated returns were higher.

Benefits Based on an Individual Retirement Savings Account

The distribution of benefits would change if IRSAs were implemented, with the impact on the benefit structure depending on the percentage of benefits based on assets in the IRSA. If the current benefit structure was simply replaced with one in which retirement benefits were determined by the amount of money in one's IRSA, then its progressive character would be eliminated. All else being equal, a retired worker who consistently earned half of the earnings of the average worker would expect to receive half of the average benefit.¹⁹ By comparison, under current law, that low-wage worker receives roughly 65 percent of the average benefit. Similarly, a retired worker whose lifetime earnings were 1.5 times that of the average worker could expect to receive 50 percent more than the average benefit under a pure defined contribution plan, rather than about 30 percent above the average benefit under the current system.

Deviations would occur if the rates of return on investments differed. But low-wage workers might not invest their IRSAs in assets that would yield higher returns than those of other workers. Indeed, lower-wage workers might well be more risk-averse and less sophisticated in their investment behavior and therefore obtain lower returns.

However, the goal of redistribution need not be abandoned if IRSAs were adopted. Other federal programs used in conjunction with Social Security benefits based strictly on the value of IRSAs could achieve minimum levels of income or redistributive objectives. For example, the Supplemental Security Income (SSI) program already provides cash assistance to poor elderly or disabled participants. That program could be expanded or modified. One problem that would need to be addressed, however, is whether the existence of SSI or other means-tested programs would encourage individuals to choose riskier investment strategies for their IRSAs or withdraw them early because taxpayers would, in effect, bear a portion of the risk.

Alternatively, the progressive benefit structure could be maintained by using a mixed strategy in which only a portion of the payroll tax would go to the IRSA. If the benefit structure for the remainder was left in place, then the overall system would still be progressive, albeit somewhat less so. One way of doing that would be to lower the replacement rates within each of the three brackets in the benefit formula proportionately, while setting the bend points as under current law. Another approach (which could be combined

19. This calculation assumes that all contributions would accumulate until retirement. Early withdrawals, of course, would reduce benefits further.

with the mixed strategy) would be to adjust either the Social Security benefits that would be paid or the amount that would be made available to the worker for investment to preserve the current degree of progressivity.²⁰

Other aspects of the Social Security system would be more difficult to preserve. For example, the specific treatment of benefits for disabled workers and for survivors and spouses of workers in the present benefit structure might not be easily replicated in a defined contribution plan. And the indexed annuity feature of the current Social Security system, which ensures that benefits are indexed to keep pace with inflation and are paid as long as a person lives, might not be readily available in private markets. Without such a feature, some people could find that their IRSA payouts decline in value when inflation is positive or are exhausted before the end of their life.

Indeed, how IRSAs are converted into benefits for retirees would have a large bearing on the well-being of the elderly, the amount of public assistance that is needed to support a minimum standard of living, and the amount of wealth the next generation inherits. If IRSAs were paid out as lump-sum distributions at the time of retirement, people who did not invest wisely or who lived unexpectedly long might find themselves without sufficient financial resources toward the end of their lives. Public assistance might be required for some. If people chose to convert IRSAs into annuities, any price charged other than the actuarially fair price would deliver windfalls to either the issuers or the recipients, whether people purchased annuities from the government or from private entities. Moreover, no wealth accumulated in IRSAs would be transferred to the next generation if annuities were chosen.

In sum, moving to a system in which a portion of one's Social Security benefits was based on investments in an IRSA would require decisions to be made about which elements of the current benefit structure should be preserved, modified, or eliminated. Mechanisms could probably be devised that would preserve the long-established principle of providing higher earnings-replacement rates for retired workers with low lifetime earnings. But maintaining the myriad other features of the system would be much more of a challenge.

20. Such a plan was devised by the General Accounting Office. See General Accounting Office, *Social Security: Analysis of a Proposal to Privatize Trust Fund Reserves* (December 1990).

CONCLUSION

No easy fixes to the funding problems of the Social Security system exist. Although reinvesting the assets of the Social Security trust fund at first seems to offer some relief to the long-term funding problem, closer examination of such approaches shows that little would change. Social Security benefits must be financed using resources from the economy. Whether those resources are obtained from current taxes or from earnings on assets does not matter much.

Letting individuals take control of their Social Security accounts might generate more interest in saving for retirement, but it would also introduce a host of changes in the way today's Social Security system affects the distribution of income. Moreover, better rates of return are uncertain at best. In some cases, individuals could unexpectedly find their retirement goals undermined by the volatility of market rates of return.

