Social Security and the Stock Market
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The Retirement Income Challenge
Facing the United States

The U.S. retirement income system, like the systems in other industrial nations, faces major demographic and economic challenges going forward. As discussed in the introduction, population aging over the next quarter century will raise the cost of promised Social Security benefits far above projected revenues. Eliminating the shortfall requires some combination of higher taxes, lower benefits, and/or the introduction of equity investments with their higher returns, albeit with greater risk. Complicating the challenge of restoring balance to Social Security is a major shift in the nature of employer-sponsored retirement income plans. In 1980, most covered workers were in traditional defined-benefit pension plans, which provide lifelong benefits typically based on final salary and years of service. In such plans, the employer managed the program and bore key risks, such as the risk that investment returns prove inadequate or that retirees live longer than expected. Today, employers typically offer defined-contribution plans—primarily 401(k) plans—where the employee makes the decisions and bears all the risk. While 401(k) plans are better for mobile employees in that they can take their accumulations with them as they move from job to job, the ultimate level of retirement income has become much more uncertain. Reform proposals for Social Security must therefore be considered in the context of the increased risk that workers now face in their 401(k) plans.

This chapter describes the evolution of the U.S. public and employer-sponsored retirement system since 1980 and the primary options put forward as potential solutions to Social Security’s funding deficit.
THE U.S. RETIREMENT SYSTEM

The United States has a retirement income system with relatively modest public pensions and significant employer plans. Like other Anglo-Saxon nations, the United States expanded both public and employer programs at the end of the long prosperity that followed the end of the Second World War. After Congress enacted Medicare in 1965 and increased Social Security benefits in 1972, the bulk of the elderly were lifted out of poverty and assured a modestly comfortable standard of living. After the enactment of ERISA in 1974, employer pensions became a reasonably secure and widespread source of old-age income, primarily for middle- and upper-income workers. Income from government and employer plans, along with rising home ownership, has allowed much of the elderly to maintain a reasonable approximation of preretirement living standards.

The Role of Social Security in the U.S. Retirement Income System

Social Security has been the largest source of old-age income in the United States over the past quarter century. Social Security benefits are critically important for low-wage workers because they have virtually no other source of retirement income. Today, as in 1980, Social Security accounts for more than 80 percent of income in the lowest quintile of elderly households compared with only 19 percent in the highest. Even in the middle-income quintile, Social Security provides two-thirds of income (Figure 3.1).1

The Social Security benefit formula has remained essentially unchanged since the expansion of the program in the 1970s. (See Box 3.1 for a description of how Social Security benefits are calculated.) The standard measure of the generosity of such programs is the replacement rate of a hypothetical average earner. The replacement rate is the benefit as a percent of preretirement earnings. The hypothetical average earner is a worker who consistently earns the national average wage and retires at age 65.2 The Social Security Administration calculates replacement rates for hypothetical low, medium (average), and high earners—workers who effectively earn 45 percent, 100 percent, and 160 percent of national average earnings over their working careers and retire at age 65.
Figure 3.1 Sources of Retirement Income in the United States, by Income Quintile, 2004

Box 3.1 The Calculation of Social Security Benefits

The primary insurance amount (PIA) is the benefit a worker would receive at the normal retirement age. The calculation of a worker’s PIA involves three steps:

1) Earnings prior to age 60 are restated in terms of current wages. This is done by indexing those earnings by wage growth up to age 60. Wages after age 60 are not indexed.

2) The highest 35 years of adjusted and unadjusted earnings are then averaged and divided by 12 to give average indexed monthly earnings (AIME).

3) Finally, the PIA is produced by applying three different replacement rates to different portions of the worker’s AIME. The “bend points” dividing AIME into these three tranches are set percentages of national average earnings (NAE) in the year the worker reaches age 60. Specifically, a worker’s PIA replaces:

- 90 percent of AIME up to 22 percent of NAE in the year s/he turns 60,
- 32 percent of AIME between 22 and 133 percent of NAE that year, and
- 15 percent of any AIME in excess of 133 percent of NAE that year.

For workers reaching age 60 in 2004, the PIA is the sum of:

- 90 percent of the worker’s first $656 of AIME, plus
- 32 percent of AIME between $656 and $3,955, plus
- 15 percent of any AIME in excess of $3,955.

The worker’s PIA is continually recalculated as long as the individual remains employed. It is also indexed to prices from age 62.
It also calculates replacement rates for a hypothetical maximum earner, whose wages consistently equal the maximum amount covered by the program. These replacement rates for 2006 are given in Table 3.1.

Retired workers do not need 100 percent of their preretirement earnings to maintain their preretirement standard of living. They no longer pay Social Security payroll tax, often pay less in income tax, have typically paid off their mortgage, no longer need to save for retirement, nor need to support their children. Estimates of the amount of income needed to maintain preretirement living standards typically range from 65 to 85 percent of preretirement earnings. The hypothetical replacement rates in Table 3.1 indicate that Social Security satisfies a large portion of the retirement income needs of low-wage workers. Medium and high earners must clearly supplement their Social Security income, primarily through employer plan benefits, to maintain their preretirement standard of living.

The replacement rates in Table 3.1 are hypothetical. They depend on several clearly unrealistic assumptions. Workers do not earn a constant percentage of the national average wage over the course of their careers. Recently retired men, in fact, have averaged 6 years of zero earnings from age 22 to the year they claim benefits. Women have averaged 13 years of zero earnings (U.S. Social Security Administration 2004). Most workers also claim benefits well before age 65. In 2003, 59 percent of women and 53 percent of men claimed benefits at age 62. And while the hypothetical rates are typically given for individuals, most people enter retirement as couples.

Estimates of actual Social Security replacement rates are nevertheless quite close to what the policy model suggests, as shown in Table 3.2. Retirement earlier than the Normal Retirement Age lowers actual

### Table 3.1 U.S. Social Security Replacement Rates for Hypothetical Workers, 2006

<table>
<thead>
<tr>
<th>Earner</th>
<th>Career average earnings</th>
<th>Replacement rate (%)</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Age 62</td>
<td>Age 65</td>
<td>-------</td>
<td>-------</td>
</tr>
<tr>
<td>Low</td>
<td>45% of national avg. earnings</td>
<td>42</td>
<td>56</td>
<td></td>
</tr>
<tr>
<td>Medium</td>
<td>100% of national avg. earnings</td>
<td>31</td>
<td>41</td>
<td></td>
</tr>
<tr>
<td>High</td>
<td>160% of national avg. earnings</td>
<td>26</td>
<td>35</td>
<td></td>
</tr>
<tr>
<td>Maximum</td>
<td>22</td>
<td>29</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

replacement rates. On the other hand, the years out of the labor force reduces lifetime earnings and this reduction, given the program’s progressive benefit formula, raises replacement rates. In addition, Social Security gives spouses the greater of their own earned benefit or half of their spouse’s benefit, which raises the replacement rate of couples.

For single individuals, the median Social Security replacement rate is 45 percent—quite close to the hypothetical rate. Men have lower replacement rates because they have above-average earnings and the program’s progressive benefit formula replaces a smaller percentage of above-average earnings; single women, conversely, have below-average earnings and higher replacement rates. For couples, the median Social Security replacement rate is 44 percent. Not surprisingly, earnings replacement is sharply higher for couples where only one spouse works. As married women have gone to work, they often increase the household’s preretirement earnings without raising its Social Security benefits, since the woman’s own earned benefit is often less than half her husband’s benefit. The result has been a 41 percent replacement rate for couples where both spouses have earnings.

Social Security replacement rates for most household types thus appear quite close to the hypothetical 42 percent rate. This level of earnings replacement is generally seen as providing a solid base upon which most retirees can add income from other sources for a relatively secure retirement.

But this level of earnings replacement is scheduled to sharply decline, as noted in Chapter 1. After the rise in the normal retirement
The Retirement Income Challenge Facing the United States

age, the deduction of increased Medicare premiums, and the taxation of benefits under the personal income tax, the replacement rate for the hypothetical medium earner will be substantially lower in, say, 2030 than it is today.

**The Role of Employer Plans in the U.S. Retirement Income System**

Employer retirement plans, especially after the enactment of ERISA in 1974, function as the nation’s primary supplement to Social Security for middle- and high-income workers. Most government workers and about half of the private sector workforce—essentially the better paid half—participate in an employer-sponsored plan. In 1980, most such workers were covered by a defined-benefit pension plan that paid benefits at retirement in the form of a lifetime annuity. The payment is typically calculated as a percentage of final salary for each year of service, say 1.5 percent, so workers with 20 years would receive 30 percent of final salary for as long as they live. The employer finances these benefits by making pretax contributions into a pension fund; employees typically do not contribute.

For the steady employee who remains with one firm, defined-benefit plans provide a stream of monthly benefits that replaces a significant portion of earnings at retirement. The major drawback is that mobile employees forfeit some or all future pension income when they move from job to job. Despite this limitation, employer pensions account for about a fifth of the income of the elderly, and about a quarter of that income other than earnings from work. Among households with employer pension income, Social Security and employer plan benefits at retirement replace 70 percent of preretirement earnings for the median single individual and 63 percent for the median couple (Table 3.3). This level of earnings replacement is sufficient to maintain a rough approximation of preretirement living standards.

Employers supported these plans because they helped manage their workforce. As discussed in Chapter 2, defined-benefit pension plans encourage long tenure and efficient retirement. To fund these plans, employers typically contributed between 7 and 8 percent of payroll. The plan trustees (typically officers of the employer) then held the assets and directed the investments, with the employer retaining the risk that the assets in the plan would not be sufficient to pay out promised
benefits. ERISA required the employer to pay down shortfalls within 15 or 30 years, depending on the source. Should a plan terminate with insufficient assets, the PBGC, created by ERISA, insured benefits up to specified limits.⁶

THE REFORM OF THE U.S. RETIREMENT INCOME SYSTEM SINCE 1980

Soon after the expansion of the nation’s retirement income system, it became clear that powerful demographic and economic forces were undermining the system’s long-term finances. Serious solvency problems emerged in both Social Security and employer plans. Employers also found traditional defined-benefit pension plans unsuited to the more fluid and volatile global high-tech economy and instead opted for new and largely untested defined-contribution retirement plans.

### Table 3.3 Actual Replacement Rates in the United States for Median Couples and Singles, with and without Pension Income

<table>
<thead>
<tr>
<th>Household type</th>
<th>Replacement rate (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Social Security + pension</td>
</tr>
<tr>
<td>Couples</td>
<td></td>
</tr>
<tr>
<td>Without pension</td>
<td>43.0</td>
</tr>
<tr>
<td>With pension</td>
<td>63.3</td>
</tr>
<tr>
<td>Single</td>
<td></td>
</tr>
<tr>
<td>Without pension</td>
<td>46.2</td>
</tr>
<tr>
<td>With pension</td>
<td>70.4</td>
</tr>
</tbody>
</table>

NOTE: The replacement rates in this table define retirement income as Social Security benefits, employer pensions, the annuitized value of employer defined-contribution balances, and for those with pension coverage, the annuitized value of Individual Retirement Account (IRA) balances. IRA balances are included for those with pension coverage, as most IRA balances have been created as a result of rollovers from employer plans. The replacement rates in this table define preretirement income as AIME plus earnings above the cap and returns on financial assets.

ERISA’s regulation of pension funding followed the “best practice” of the pension actuaries. In particular, it regulated solvency by asking whether a plan’s assets were sufficient to pay promised future benefits, given the expected return on those assets. But in the recessions of 1980–1982, large funding deficits suddenly emerged, exposing serious inadequacies in this approach. The primary reason why these large deficits appeared so suddenly was because employer plans invest a substantial portion of their assets in equities. The expected return on equities is far greater than that on bonds, which makes a plan far more affordable, but equities are risky (see Box 3.2). Even if equities deliver their expected return in the long run, the value of a plan’s assets can suddenly fall. Often the fall in asset prices triggers a cut in expected returns, which sharply raises the present value of the plan’s distant pension obligations. In the actuarial funding approach, which ERISA had adopted, the sponsor functioned as the plan’s financial guarantor. When “risk happened,” employers were required to increase their contributions and gradually bring the plan back into balance. But, rather than being able to backstop their plans, many large sponsors themselves went bankrupt in the recessions of the early 1980s.

The plan of a bankrupt sponsor is terminated, and any unfunded liabilities are transferred to the PBGC. Without the employer as the financial guarantor, only low-risk bonds can be used to satisfy the liabilities of a terminated plan. The pensions are much lower than in an ongoing plan, as benefits are based on earnings at the time of the termination, not at retirement or some later date. But, as bonds carry an interest rate well below the expected return on equities, each dollar of future pension benefits requires more assets to make the plan solvent. To protect workers (and the PBGC) in the event of a termination, Congress reformed the rules of employer plan funding in 1987. It required sponsors to calculate the plan’s termination liability—the present value of currently accrued benefits discounted to the present using the interest rate on low-risk bonds as the discount rate. If the plan’s assets were less than 90 percent of its termination liability, the sponsor had to eliminate the deficit within five years.7
Stocks have historically delivered much higher returns than bonds. Over the period from 1926 to 2002, stocks returned 7.2 percent, after adjusting for inflation, compared with 2.4 percent for intermediate government bonds (see table below).

But returns are not the whole story. Stocks are much riskier, as seen in the standard deviations of returns reported in the table. Stocks can be expected to outperform bonds over the long term, but the performance of the stock market is very uncertain. For any given 10-year period over the past 75 years, investors have had a 25 percent chance of realizing lower returns from a portfolio of Standard and Poor’s stocks than from a portfolio of government bonds (MaCurdy and Shoven 2001).

The higher expected return on stocks, in fact, is due to their greater risk. Investors are risk-averse and demand an “equity premium” to hold stocks instead of bonds. If stocks were not priced in a way that produced a higher expected return, investors would always choose bonds. (Some economists [e.g., Mehra and Prescott 1985] have concluded that the rate of return on stocks is greater than can be explained by their greater riskiness).

### Annual Returns on Financial Instruments in the United States, 1926–2002

<table>
<thead>
<tr>
<th>Financial instrument</th>
<th>Real rate of return (%)</th>
<th>Standard deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Equitiesa</td>
<td>7.2</td>
<td>20.5</td>
</tr>
<tr>
<td>Long-term corporate bonds</td>
<td>2.9</td>
<td>8.7</td>
</tr>
<tr>
<td>Intermediate government bonds</td>
<td>2.4</td>
<td>5.8</td>
</tr>
<tr>
<td>U.S. Treasury bills</td>
<td>1.8</td>
<td>3.2</td>
</tr>
<tr>
<td>Memo:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inflation</td>
<td>3.0</td>
<td>4.4</td>
</tr>
</tbody>
</table>

*aStocks refer to the returns on large company stocks. Over the same period, the return and standard deviation on small company stocks was somewhat higher: a 12.5 percent return with a standard deviation of 33.2 percent.

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The Shift to Defined- Contribution Employer Plans

Maintaining the solvency of defined-benefit plans has been the most difficult employer plan challenge since 1980. But the most important change was the shift from defined-benefit to defined-contribution plans (most often a 401[k]). By any criterion—assets, benefits, participation, or contributions—defined-contribution plans grew enormously between 1979 and 2000 (Figure 3.2). In contrast to defined-benefit plans, defined-contribution plans are like savings accounts. Generally the employee, and often the employer, contributes a specified percentage of earnings into the worker’s individual account. These contributions are invested, usually at the direction of the employee, mostly in mutual funds consisting of stocks and bonds. Upon retirement, the worker generally receives the balance in the account as a lump sum.

The defining characteristic of 401(k) plans is that the burden of providing for retirement is largely shifted to the worker. The employee

Figure 3.2 Defined-Contribution Plans as a Share of Total Pension Plans in the United States, 1979 and 2000

decides whether or not to participate, how much to contribute, how to invest the assets, and how to use the assets at retirement. In addition, workers can often access their 401(k) assets before retirement, adding another element of individual responsibility.

The shift to 401(k)s was led by a surge in new plan formation in the 1980s, a virtual halt in the formation of new defined-benefit plans, and a spike in terminations during the late 1980s. Defined-benefit plans were rarely converted to a 401(k), particularly among large plans. The most likely explanation for this reluctance is the enormous turmoil caused when mid- and late-career employees lose benefits in such a conversion.

Why did 401(k) plans spread so rapidly after 1980 while defined-benefit plans languished? A key factor in the enormous appeal of 401(k) plans to employees was the ability to gain control of their retirement planning. They could make tax-deductible contributions, have discretion over the amount saved and the investment allocation, and see their accounts grow. Most plans allowed loans and withdrawals, and young mobile workers—the primary participants in the early expansion of the 401(k)—could take their 401(k) accumulations with them as they moved from job to job.

From the employers’ perspective, 401(k) plans offered a form of pension that their workers clearly appreciated. Moreover, the employer no longer bears the risks involved in funding future retirement annuities. The cost of a 401(k) plan was highly predictable, which became increasingly important during the 1980s as the economic environment became more competitive. The out-of-pocket cost of a 401(k) plan was also lower than that of a defined-benefit plan—in the order of 2 to 3 percent of payroll. Advances in computer and communications technology also greatly simplified the cost of administering the individual accounts in a 401(k) plan.

Employment and high-value production was also shifting to sectors of the labor market where defined-benefit plans were less useful as a tool for structuring employment relationships. Defined-benefit plans are a sensible arrangement for large well-established firms with long-service employees, but they are ill-suited to industries where companies come and go and the workforce is mobile. Indeed they penalize what employers and workers in such industries increasingly valued—mobility and flexibility. Several studies find that changes in industry composition, unionization, and firm size account for about half the decline in
defined-benefit coverage (see, e.g., Andrews 1985; Gustman and Steinmeier 1992; and Ippolito 1995).

The increasingly complicated government regulation of defined-benefit plans also caused new companies, and many existing small firms, to opt for 401(k)s. In addition to ERISA, a large and complicated set of requirements in its own right, Congress in the 1980s repeatedly imposed new burdens, such as the new funding obligations and sharply increased PBGC premiums. These regulations made pensions, which are supported by federal income tax preferences, fairer and more secure, but they also made defined-benefit plans more complex and costly. The cumulative impact of the legislative changes has greatly increased the relative costs of defined-benefit plans, especially for small companies.9

A major consequence in the shift from defined-benefit pensions to 401(k)s was that employers became far less involved in the retirement income system. They generally provide a matching contribution for workers who participate, typically 50 percent on contributions up to 6 percent of earnings (Profit Sharing/401[k] Council of America 2005). But they typically outsource plan administration and investment management to financial services firms, bear none of the risks, and conduct no actuarial reviews of the retirement planning effort. Employers get some personnel benefits from offering a 401(k), attracting a more thrifty and presumably more diligent workforce (Ippolito 1998), but employers are no longer the driving force behind these plans. The initiative in retirement planning has clearly shifted to their employees and to the government, with its interest in increasing retirement saving through the offer of tax benefits.

**Restoring Solvency to the Social Security Program**

The expansion of Social Security benefits in 1972 came just eight years after the baby boom came to an end in 1964. Fertility rates fell from 3.6 children per woman in 1960 to 1.8 in 1975. It took time for policymakers to conclude that the fertility decline was permanent and would create a major financing problem for Social Security. By the early 1980s, however, the threat was clearly understood. The Social Security actuary estimated the program’s deficit at 1.8 percent of taxable payroll over the 75-year planning horizon.
In response, the National Commission on Social Security Reform was formed, headed by Alan Greenspan. The commission represented a broad cross section of political opinion, and its 1983 report presented a series of reforms, endorsed by either the whole commission or a majority of its members that would restore solvency over the 75-year horizon. The key solvency reforms that Congress enacted into law included (National Commission on Social Security Reform 1983):

*Increased funding*

- Accelerated the introduction of scheduled future tax increases. Social Security retirement benefits in 1982 were funded by a 9.15 percent tax on wages, split evenly between workers and employers. The tax was quickly raised to the current 10.6 percent.
- Increased the payroll tax paid by the self-employed to equal the total employer-employee tax on wage-and-salary workers.
- Extended coverage to nonprofit and new Federal government workers.

*Decreased benefits*

- Cut future benefits by increasing the Normal Retirement Age. Congress increased the normal retirement age from 65 (for those reaching age 62 prior to the year 2000) to age 67 (for those who reach 62 in 2022 or after).
- Subjected half the benefits of higher-income beneficiaries to income taxation, with the proceeds returned to the Social Security program.

The design of the system has changed little since these reforms. Since 1983, the most important changes have perhaps been the decision to subject 85 percent of the benefits of higher income beneficiaries to income taxation, up from 50 percent, and the elimination of the earnings test, in 2000, for workers older than the normal retirement age.

**THE CHALLENGE GOING FORWARD**

The reforms enacted since 1980 strengthened the solvency of both Social Security and employer defined-benefit plans for a time. But, by
the early years of the twenty-first century, both faced solvency problems quite similar to those addressed in the 1980s. Defined-contribution plans, now the dominant form of employer retirement programs, are solvent by definition, but their ability to deliver adequate old-age incomes, especially given the scheduled decline in Social Security replacement rates, has emerged as a serious new problem. On the positive side, the system has changed in ways that encourage workers to extend their careers and shorten their retirements, which could have an important beneficial effect on the retirement income problem.

The Uncertain Future of Employer Plans

The reforms enacted to shore up employer defined-benefit plans did little to increase the flow of resources into the system from the mid-1980s through the end of the century. The funding ratios that the government used to measure solvency were strong. The stock market boomed, which drove up the value of pension fund assets. The returns on both stocks and bonds were high, which kept the present value of future obligations low. But Congress also strictly limited a sponsor’s ability to contribute to a “fully funded” pension plan. As a result, relatively little new money flowed into the system.

After the turn of the century, the economy slid into recession and the old solvency problems returned. Total underfunding in employer defined-benefit plans reached an estimated $400 billion, and the average funding ratio fell to 76 percent by year-end 2002. Under the new funding rules, this low level of funding triggered a sharp increase in required pension contributions. This demand for increased contributions in recessions, precisely when employers are financially stressed, makes the future of traditional defined-benefit plans even more uncertain (Bovbjerg 2003; WatsonWyatt 2005a).

The 401(k) plan has clearly emerged as the dominant employer plan design. Its performance as a vehicle for achieving retirement income security, however, has been disappointing. Simulations show that a worker in the middle of the earnings distribution in theory should end up with about $300,000 in his 401(k) account and/or IRA at retirement. (Most of the money in IRAs is rolled-over balances from 401(k) plans.) This amount would provide an adequate retirement income in addition to Social Security. The Federal Reserve’s 2001 Survey of Consumer Fi-
nances, however, reports that the typical individual approaching retirement had only $60,000 in such accounts (Figure 3.3). Of course, many in this group may not have spent a lifetime covered by 401(k) plans. But even younger cohorts, who have grown up with 401(k) plans, do not seem to be on track for an adequate retirement income. For example, the average 401(k)/IRA holdings for those 45 to 54 are only $49,000 compared to a predicted $155,000.

A critical factor explaining these low balances is that the entire burden has shifted from the employer to the employee. In these plans, workers must decide whether or not to join, how much to contribute, how to invest the assets, when to rebalance, what to do about company stock, whether to roll over accumulations when changing jobs, and how to withdraw the money at retirement. The evidence indicates that a significant fraction of participants makes serious mistakes at every step along the way. Most importantly, a quarter of those eligible to partici-

Figure 3.3 401(k)/IRA Actual and Simulated Accumulations in the United States, by Age Group, 2001

pate choose not to do so, and many cash out when they change jobs. In addition, over half fail to diversify their investments, many overinvest in company stock, and almost no participants rebalance their portfolios as they age or in response to market returns.

The basic problem is that financial decisions are difficult. Most participants lack sufficient financial experience, training, or time to figure out what to do. These plans could be greatly improved by making them easier and more automatic. Indeed, one-third of large 401(k) plans now have automatic enrollment provisions whereby employees are automatically put into the plan and must explicitly opt out if they do not want to participate (Profit Sharing/401[k] Council of America 2005). Although this and other changes may improve balances in the future, to date they remain low.

An important consequence of the shift to 401(k)s that strengthens the retirement income system has been the elimination of early retirement incentives found in defined-benefit pension plans. As discussed above, employers built incentives into their pension plans to terminate employment relationships at some targeted age. Over the last quarter of the twentieth century, sponsors commonly offered sweetened early retirement pensions to induce retirements well before age 65, the normal retirement age generally specified in such plans. These incentives helped push the average retirement age for men from age 66 in 1970 to age 63 in 1985 (see Figure 3.4).

By contrast, 401(k) plans are age-neutral. The balance in a worker’s account does not change as a result of the worker reaching a particular age. Working longer will reduce the length of retirement, so a given balance would yield a higher monthly payout. It should also push up the worker’s balance due to added contributions and investment earnings. These plans have no age-triggered adjustments and especially no sweeteners to induce a worker to retire early. A number of studies have shown that workers covered by a 401(k) retire about one year later than otherwise similar workers covered by traditional defined-benefit plans (Friedberg and Webb 2005; Munnell, Triest, and Jivan 2004).

The emergence of the 401(k) coincided with the stabilization of the average retirement age for U.S. men in the mid-1980s, and its slight rise since then (Figure 3.4). The shift to 401(k)s should not be seen as responsible because it takes decades for such a change to affect work-retirement decisions. The fact that the retirement income system has
become significantly more “age-neutral,” however, should become increasingly important going forward.\textsuperscript{10} To the extent that it raises the average retirement age, the shift to 401(k)s would increase the resources and reduce the burdens on the retirement income system.

The nation’s employer retirement income plans have changed dramatically since 1980. The experience thus far illustrates serious difficulties in maintaining the solvency of employer defined-benefit plans and in relying on 401(k)s as a retirement income security vehicle. The elimination of early retirement incentives, however, should be an important improvement. These changes in employer plans provide a critical backdrop when considering alternative approaches to restoring solvency to Social Security.

Social Security’s Long-Term Funding Shortfall

The 1983 reforms cut benefits, raised contributions, and built up the Social Security Trust Fund. The 1983 Trustees Report in fact projected
a 75-year surplus equal to 0.02 percent of taxable payrolls. Nevertheless, deficits appeared almost immediately after the 1983 legislation and increased sharply in the early 1990s. The 2006 Trustees Report projects a deficit of 2.02 percent over the 75-year horizon, essentially the same as the deficit prior to the 1983 amendments (see Figure 3.5). Without any changes, Social Security can pay full benefits until 2040. Thereafter payroll taxes are sufficient to cover only about 70 percent of commitments.

Why did the balance deteriorate? Table 3.4 shows the source of the swing in the Trustee’s accounts. Leading the list is the impact of changing the valuation period. That is, the 1983 Report looked at the system’s finances over the period 1983–2058; the projection period for the 2006 report is 2006–2080. Each time the valuation period moves out one year, it picks up a year with a large negative balance. This is the reason why policymakers now insist on looking beyond the 75-year projection period when considering ways to restore solvency.

Figure 3.5  U.S. Social Security’s 75-Year Deficit as a Percent of Taxable Payrolls, 1983–2005

A Social Security Advisory Council, established by President Clinton in 1994, thus had to revisit the problem. As was typical, the council represented a broad cross section of political opinion. The members reached a consensus on various principles and reforms—they opposed means-testing, they thought that each generation’s benefits should bear a reasonable relationship to its contributions, they favored an increase in the income taxation of benefits, and they also suggested bringing new state and local government workers into the program. A small majority would also accelerate the rise in the Normal Retirement Age and then index it to longevity. These initiatives, however, were insufficient to eliminate the program’s long-term funding shortfall (U.S. 1994–1996 Advisory Council on Social Security 1997).

The council members found themselves beyond the standard approach to restoring solvency (i.e., via tax increases and benefit cuts alone). The payroll tax was already the largest federal tax by far on low- and middle-income households, and benefits would be quite low after the 1983 amendments were fully phased in. Further cuts would clearly put the standard of living of many older Americans at risk.
Rather than relying solely on higher taxes or lower benefits, members of the advisory council embraced—in one form or another—investment in equities, with their high expected returns, to help restore solvency to the nation’s Social Security program. They also saw equity investment as the only way to make the Social Security benefits that younger workers would receive in retirement bear a reasonable relationship to their contributions. But the council failed to coalesce around a single consensus approach. Instead it divided into three separate camps, each advancing a distinctly different proposal with a different approach to equity investment. These three approaches define the primary options for reforming the basic design of the U.S. Social Security program.

- **Trust Fund Investment.** The “Maintenance of Benefits” plan recommended modest changes to taxes and benefits and closed the remaining gap by investing a portion of trust fund assets in equities, which promised higher expected returns, and also by increasing contributions in the out years.

- **Add-On Accounts.** The “Individual Accounts” plan proposed to achieve solvency by cutting Social Security’s guaranteed benefits to fit within the existing payroll tax. In response to the sense that benefits would then be inadequate, the plan mandated an additional contribution, equal to 1.6 percent of covered earnings, to new individual retirement savings accounts. The use of individual accounts opened the door for equity investments earmarked for old-age pensions but without involving the government in the financial markets and corporate governance.

- **Carve-Out Accounts.** The “Personal Security Accounts” plan proposed to achieve solvency by cutting Social Security’s guaranteed benefits and carving contributions to “Personal Security Accounts”—equal to 5 percent of covered earnings—out of the existing payroll tax. Guaranteed benefits had to be cut not just to fit within the resources provided by the current payroll tax, as in the Add-on Account approach, but even more to accommodate the 5 percent carve out. To maintain benefit adequacy, the plan relied on larger investment in equities, with their high expected returns. The reform advanced by President Bush is a descendent of this proposal.
Political considerations have largely determined the support given each proposal for incorporating equities into the Social Security program. Liberals are comfortable with government programs and prefer trust fund investment, as it maintains Social Security’s currently scheduled level of guaranteed benefits. Conservatives prefer carve-out accounts, as it promises to minimize the scope of government and maximize individual self-reliance. Moderates seeking a middle ground will often opt for the add-on accounts approach, with the somewhat smaller guaranteed benefits, the addition of a limited amount of individual choice, and a politically palatable way (mandatory saving vs. higher taxes) to get more resources into the system.

Practical considerations should also influence the desirability of the three alternative approaches to reforming Social Security. Most important is how the approach to equities shapes the retirement income system. Other considerations include the cost of administering these programs, the ability to oversee their operation and restrain the power of government, and the capacity for handling the risk in equity investment. Risk management is perhaps the most critical of these pragmatic considerations. As the experience of employer defined-benefit pension plans clearly shows, the risk that comes with equity investment can radically upset a retirement income program.

CONCLUSION

The U.S. retirement income system enters the new century in an unsettled state. Social Security, the primary source of income for the majority of older Americans, lacks the resources as of 2040 to pay the full value of even the reduced benefits currently promised. This solvency problem has dominated retirement income policy debates for well over a decade, but rather than move the discussion toward consensus, the debates have generated increasingly fierce disagreements over the government’s proper size and role in the economy.

A second problem—that of assuring adequate retirement incomes—has also emerged on the horizon. As discussed in Chapter 1, the scheduled rise in the normal retirement age, plus higher projected Medicare premiums and income taxes, will dramatically cut the recipient’s net
Social Security benefits. If solvency is restored through a plan that cuts benefits and increases taxes by comparable amounts, it would reduce Social Security replacement rates below their lowest level in the program’s history.

Employer plans are not prepared to take on more of the burden. The share of the workforce participating in a plan and the level of contributions have been roughly constant for the past quarter century. But the continuing shift from defined-benefit to defined-contribution plans has placed more of the risks and responsibilities on the shoulders of individual workers, and workers have not demonstrated great success in managing their accounts. Thus, employer plans are unlikely to make up the shortfall created by the scheduled decline in Social Security benefits, let alone any further reductions.

The next three chapters examine reforms enacted in the United Kingdom, Australia, and Canada. Like the United States, these three nations all have Anglo-Saxon retirement income systems, with relatively modest public pension programs and a significant reliance on funded employer plans. Each, however, has incorporated equity investments into its social security program, each along the lines of one of the options defined by the 1994–1996 Social Security Advisory Council. The experiences of these nations thus provide instructive examples of what might play out if we were to adopt one of these three ways forward.

Notes

1. Elderly households are defined as households headed by someone age 65 or older.

2. Although this example uses 65 as the retirement age, the so-called normal retirement age—the age when the worker is eligible for full benefits—is in the process of moving from 65 to 67 by 2022. The increase began with individuals who reached age 62 in 2000, for whom the normal retirement age is 65 plus two months, and increases two months per year until it reaches age 66. Then, after a 12-year hiatus, the normal retirement age begins to increase again by two months per year until it reaches age 67 for individuals who reach 62 in 2022 or later.

3. The Munnell and Soto (2005a) replacement rates presented in Table 3.2 are somewhat different from the hypothetical rates published by the U.S. Social Security Administration (SSA) and presented in Table 3.1. Munnell and Soto give benefits as a percentage of AIME, or average indexed monthly earnings. The SSA hypothetical rates give benefits as a percentage of hypothetical earnings prior to
retirement. For the “medium earner” this is national average earnings when the worker is age 64. The SSA specification of preretirement earnings is somewhat higher than AIME. If the SSA defined preretirement earnings as AIME, the hypothetical “medium” earner would have a 48 percent replacement rate. Conversely, adjusting Munnell and Soto’s 44 percent overall rate, for comparability with the SSA figures, would produce a replacement rate somewhat less than the SSA’s 42 percent.

4. Especially in collectively bargained plans, the annuity might be a dollar amount per month for each year of service, say $50, so workers with 20 years of service would receive $1,000 per month at age 65.

5. Such plans motivate workers to remain with the firm because benefits based on final earnings increase rapidly as job tenures lengthen. They also encourage workers to retire at an age when productivity typically falls below their compensation. Thus workers who stay past the plan’s designated retirement age forgo their pension while they work, with no increase in future benefits. As a result, their net compensation is equal to the difference between their wage and their foregone pension. Considerable work has documented the impact of incentives to retire in defined-benefit plans: Lazear (1979, 1985); Samwick (1998); Stock and Wise (1990a,b); Kotlikoff and Wise (1987, 1989); and Fields and Mitchell (1984).

6. The PBGC monthly guarantee limit in 2005 is $3,801 at age 65 and declines to $1,710 at age 55. Employers pay for this insurance with premiums largely determined by the plan’s funding status.

7. In addition to imposing this new funding requirement, Congress dramatically raised PBGC premiums—to $19 plus a “risk adjusted” premium equal to 0.8 percent of the plan’s unfunded termination liability—and gave the PBGC a claim against 100 percent of the sponsor’s net worth. Many of these changes were enacted in the Omnibus Budget Reconciliation Act of 1987.

8. Nonprofit and governmental organizations have shifted towards 403(b) and 457 plans, which are very similar to 401(k)s. Many large sponsors of defined-benefit plans in the late 1990s were shifting to new hybrid formats, such as the “cash balance plan,” that replace the worker’s pension benefit with an individual defined-contribution type account. In a cash balance plan, employers contribute the full amount, equal to a set percentage of salary, and increase the balance by a rate of return they set. Like a traditional defined-benefit plan, the assets of the pension fund, the sponsor, and the PBGC all stand behind these balances. As the government clarifies the rules governing cash balance conversions, many large sponsors are expected to adopt this defined-contribution format for their “defined-benefit” program, or to switch to a more conventional 401(k) (Munnell and Sundén 2004).

9. The biggest increase in both absolute and relative costs of defined-benefit versus defined-contribution plans occurred in the late 1980s as plans adjusted to the Retirement Equity Act of 1984 and the Tax Reform Act of 1986 that increased record-keeping requirements, administrative expenses, and benefit costs (Hustead 1998).
10. Retirement incentives have also been reduced in the Social Security program. The 1983 amendments introduced actuarially fair increases in benefits for retirement between the normal retirement age and age 70, to be fully phased in for workers attaining age 62 after 2004. As Social Security early retirement benefits were already actuarially adjusted, the lifetime benefits of a worker with average life expectancy will be about the same regardless of whether benefits are claimed at age 62, 65, or 70 (aside from changes due to additional work). The 1983 amendments also relaxed the Social Security earnings test, and legislation eliminated the earnings test entirely for those who reached the normal retirement age. For a fuller discussion of the evolution of the earnings test and the delayed retirement credit, see DeWitt (1999).