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# Pensions, Social Security, and Savings

- Pensions and Social Security play an important role in determining U.S. savings rates. As the personal savings rate fell to a low of 4.3 percent of personal disposable income in 1987 from an average rate of 7.8 percent in the 1970s, the contribution of these retirement income programs has assumed increasing importance. Employment-based pensions paid retirees $234 billion in 1990.

- Retirement income programs are closely related to demographic changes projected to occur in the next century, including an increase in the proportion of elderly persons in the population, a gradual decline in the fertility rate, and a longer average life span. These demographic changes will produce a higher ratio of persons aged 65 and over per 100 persons aged 18–64, which may increase the need for retirement income.

- The Social Security system plays an important role in individual savings decisions and retirement income. In 1979 and 1983, Congress revised the system's benefit levels, scheduled tax rates, and future retirement age in order to maintain solvency and to prepare to pay for the baby boom generation's retirement benefits. Social Security paid cash retirement benefits totaling $168 billion in 1990.

- Several studies have investigated the effects of individual retirement accounts (IRAs) on savings. Analysts have found that some portion of IRA contributions represent new savings. The Employee Benefit Research Institute estimates that a portion of 401(k) contributions do also; 401(k) contributions by employees reached nearly $25 billion in 1988.

- During the 1980s, Congress changed some aspect of the retirement system almost annually. Future legislation affecting pensions and the Social Security system should be considered in terms of its effect on savings and economic security in retirement.

## Table of Contents

## ◆ Introduction

**The U.S. personal savings rate fell to a low of 4.3 percent of disposable income in 1987 from an average rate of 7.8 percent in the 1970s, perhaps contributing to problems facing the U.S. economy.[1] Although savings are made up of many different components, retirement programs represent a large part. The contributions of retirement programs to savings need to be understood in order to evaluate how savings are affected by legislative changes in these programs.**

Given the perceived importance of increasing the personal savings rate and reducing reliance on government income-transfer programs for future retirees, many analysts have questioned the logic behind recent tax law changes that have decreased or eliminated deductible contributions to defined benefit pension plans, 401(k) plans, and individual retirement accounts (IRAs) and have imposed penalty taxes on retirement benefits above a specified level.

A discussion of savings and retirement income vehicles must necessarily include—either directly or indirectly—the impact of an aging population. Declines in fertility and mortality rates have transformed the U.S. population from a growing one with a relatively large number of children and workers to a more stable one with a relatively large number of elderly members. The postwar baby boom also complicates U.S. demographics, because this group will need large sources of retirement income in the first decade of the next century.

This *Issue Brief* begins with a general discussion of savings. It then analyzes retirement income programs, including private pensions and Social Security, that are designed to support current and future retirees. Finally, it discusses how IRAs and 401(k) plans affect savings.

[1]National savings are defined as net national savings, personal savings are defined as net personal savings, etc. Savings are technically those monies not spent, while net savings exclude monies taken out of savings.

## ◆ Definition of Savings

The concept of savings, although widely discussed, has not been consistently and clearly defined. Do savings include only personal savings or do they also include the savings (or dissavings) of businesses and of state, local, and federal governments? Should personal and corporate savings be separated? Are durable goods included? The sale of a home can provide a sizable portion of an elderly person's income in retirement, but the home's value is not included in most common measures of savings.

In statistical estimations, savings are largely viewed as a residual. Total net national savings are the sum of net private savings, state and local government surplus or deficit, and the federal government surpluses or deficits. Historically, a common measure of the national savings rate has been the total net national savings as a percentage of the Gross National Product (GNP). While the definitions of government surplus or deficit are fairly self-evident, private savings are a more elusive measure. Private savings are the total of personal savings and corporate savings. These numbers do not include unfunded accruing pension and Social Security liabilities.[2] Also, purchases of consumer durable goods[3] are not included in savings except for home computers (Boskin, 1986).[4]

Within this definition, personal savings are defined as disposable personal income (i.e., personal income less personal tax and nontax payments) less personal outlays

[2]However, changes in pension reserves are reflected in personal savings, and changes in government pension reserves are included in the surplus or deficit of that government (Sommers, 1985).

[3]Housing is uniquely defined so as not to show a difference between owning and renting. Homeowners are assumed to pay an estimated rent to themselves, less the costs of owning a home. Capital gains or losses are not included.

[4]This definition is from the U.S. Department of Commerce. The Federal Reserve Board also has a measure of personal savings; however, there is no significant difference between the two measures, and the decline in savings does not appear to be due to mismeasurement (Bosworth, 1989).

including all durable goods, nondurable goods, services, interest, and transfers to foreigners. Personal savings are then taken as a percentage of disposable personal income to determine the personal savings rate.

## ◆ Trends in Savings

The low U.S. savings rate, at both the national level and the personal level, has been of serious concern to policymakers for nearly a decade. **Many laws, such as the Economic Recovery Tax Act of 1981 (ERTA), were enacted in part to increase saving rates and overall investment. Other laws, such as the Tax Reform Act of 1986 (TRA '86), have been viewed as decreasing savings.[5] Since the enactment of TRA '86, policymakers have been considering various proposals aimed at encouraging saving and investment.**

Regardless of the changes in the law, the personal savings rate was significantly lower in the second half of the 1980s than it was in the 1970s. The U.S. average annual rate of personal savings as a percentage of Net National Product (NNP) was 6.6 percent in the first half of the 1970s. In contrast, the personal savings rate averaged only 3.3 percent during the period from 1985 to 1990 (table 1).[6]

[5]ERTA included several provisions that affected retirement plans. Most notable were the provisions that greatly expanded IRA opportunities to anyone with personal service income, allowed for voluntary contributions to qualified plans, and increased contribution and deduction limits for both simplified employee pension (SEP) programs and Keogh (H.R. 10) plans. ERTA also made changes that affected employee stock ownership plans (ESOPs) and executive compensation arrangements. In the most pervasive changes since the enactment of the Employee Retirement Income Security Act of 1974 (ERISA), TRA '86 imposed new coverage tests and accelerated vesting requirements for qualified plans, changed the rules under which qualified plans can be integrated with Social Security, lowered limits for retirement benefits that begin before age 65, changed the timing and taxation of plan distributions, and terminated IRA deductions for many qualified plan participants. TRA '86 also substantially changed ESOPs and executive compensation.

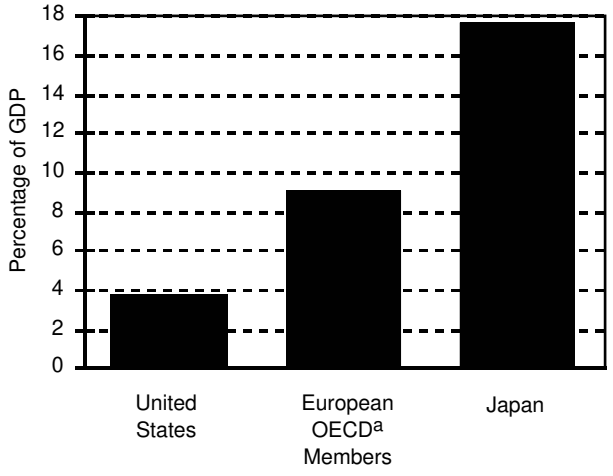
[6]Some argue that the savings rate during the 1980s was mismeasured because the return to owner-occupied housing was understated. They construct an alternative savings measure with a space rent adjustment that declines from the heights of the 1970s but to historical levels instead of to all-time lows (Munnell and Cook, 1991).

Table 1
**U.S. Savings Rates as a Percentage of Net National Product (NNP)**
**1950–1990**

| Years | Personal Savings (as percentage of Net National Product) | Corporate Savings (as percentage of Net National Product) | Government Savings (as percentage of Net National Product) |
|---|---|---|---|
| 1950–1959 | 5.2% | 3.6% | –0.2% |
| 1960–1969 | 5.1 | 3.2 | –0.3 |
| 1970–1974 | 6.6 | 2.0 | –0.5 |
| 1975–1979 | 5.7 | 3.6 | –1.2 |
| 1980–1984 | 5.2 | 1.8 | –2.9 |
| 1985–1990 | 3.3 | 0.8 | –2.8 |

Source: Alicia H. Munnell and Leah M. Cook, "Explaining the Postwar Pattern of Personal Saving," *New England Economic Review* (November, December 1991): 18.

Chart 1
**International Comparison of Net National Savings Rates, 1980–1987**




Source: John B. Shoven, *Return on Investment: Pensions Are How America Saves* (Washington, DC: Association of Private Pension and Welfare Plans, 1991).
[a]Organization for Economic Cooperation and Development.

U.S. savings rates also appear relatively low from the international perspective. Based on data compiled by the European Organization for Economic Cooperation and Development (OECD) and adjusted so that saving was defined in a comparable way across countries, between 1980 and 1987 the American net national savings rate was far behind those of Europe and Japan (chart 1) (Shoven, 1991).

Many believe that the national savings rate is closely tied to economic growth (Brady, 1989; Summers, 1989).[7] This relationship makes savings the connection between today's generation and tomorrow's generations. **If the relationship between national savings and economic growth holds, continued national low savings rates would not only limit the extent to which the United States could reduce the trade deficit and foreign capital inflows but would also inhibit future growth and, therefore, the nation's ability to create jobs and provide retirement income for future retirees.** In addressing the savings issue, demographics, the federal deficit, productivity, and real wages must be considered.

### *Effects of Demographic Trends*

The U.S. Bureau of the Census issues new population projections every five years. The latest projections were published in 1989, using 1988 as a baseline (U.S. Department of Commerce, 1989).[8] The demographic assumptions included in these projections are important for an understanding of middle-of-the-road demographic estimations and are often used in academic studies. **Changing demographics affect savings, as older and younger people tend to save at different rates, and the number of dependents workers have influences how much they can save.**

According to Census projections, the proportion of elderly persons in the population will increase in the future as a result of the aging of the baby boom generation and longer average life spans. The mean U.S. life expectancy for males and females at age 65 was estimated to be 17.2 years in 1990 and is expected to increase by 1.4 years (8.1 percent) in 2010, under the medium assumptions. It is projected to increase another 0.8 years by 2030. In 2050, life expectancy at age 65 is projected to be 20.2 years (chart 2).

Under the medium assumptions, the total fertility rate is expected to stay level at 1.85 children per woman from 1990 until 2010 and then decrease to 1.83 in 2030 and 1.80 in 2050. Mean male and female life expectancies at birth are projected to be 79.8 years in 2050, compared with 75.5 years in 1990.

[7]Summers based his evidence of this relationship on data from the U.S. Department of Labor, Bureau of Labor Statistics and the OECD.

[8]Alternatively, the Social Security Board of Trustees' annual report projects the financial status of the Social Security system for the next 75 years with three different demographic scenarios. For an evaluation of these projections, see Preston (1991).

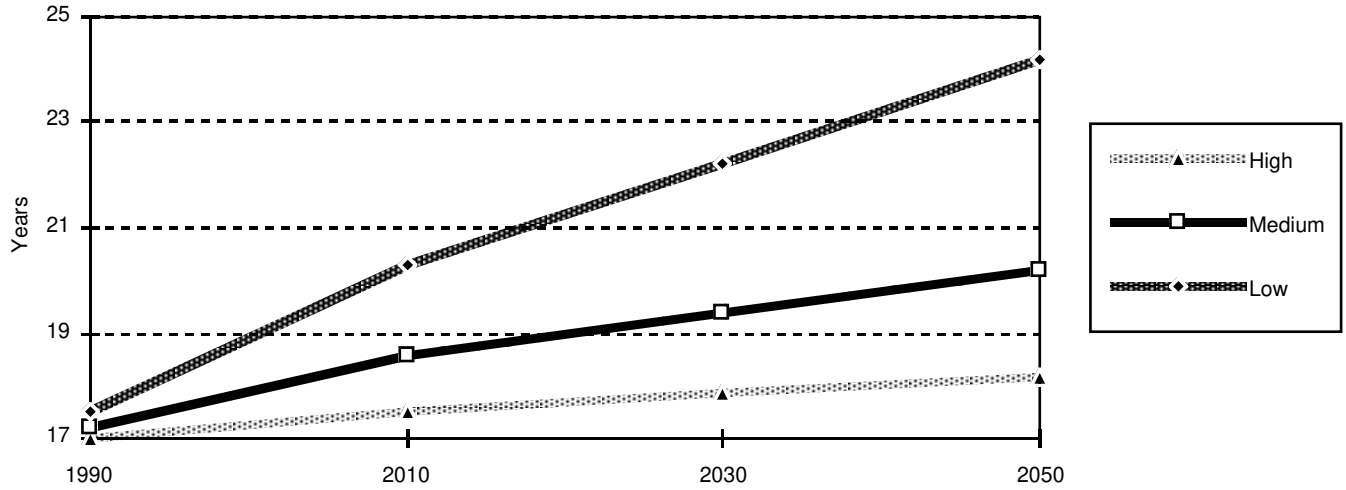
As a result of these demographic changes, the dependency ratio, as measured by the number of persons aged 65 and over per 100 persons aged 18–64, increased from 17 in 1960 to 20 in 1987. This ratio is projected to remain constant at approximately 20 until about 2010, then to increase steadily, reaching 38 in 2030. In the space of two decades this ratio is projected to rise by 90 percent. It is expected to continue to increase and reach 44 in 2080 (chart 3). In order to provide a clearer sense of how the overall age distribution of the population is expected to change, chart 4 presents the Census Bureau's medium series age distribution from 1987 to 2030.

**The decrease in older workers' labor force participation rate is evidence of the past success of pensions and Social Security but could contribute to an increasing need for financial support in the future, either from the government or from savings.** Labor force participation among males aged 55–59 fell from 89 percent in 1970 to 80 percent in 1990 and is projected to decline to 73 percent in 2030. Forty-two percent of males aged 65–69 were working as recently as 1970, but only 26 percent of this group worked in 1990. This rate is projected to fall below 21 percent by 2030. While labor force participation rates for younger females have increased significantly over the past three decades, they have remained approximately constant for women aged 55–64 and have declined for older women. Participation rates for all groups of women aged 55 and over are projected to decline in the future, following the pattern of males' rates.[9]

Another by-product of the coming of age of the baby boom generation appears to be the housing boom that resulted in a real increase in the value of housing of approximately 3 percent per year for the 14 years from 1966 to 1979, according to a recent study (Munnell and Cook, 1991). The authors suggest that if increases in housing stock resulted from unanticipated gains, households would be expected to revamp their savings plans.

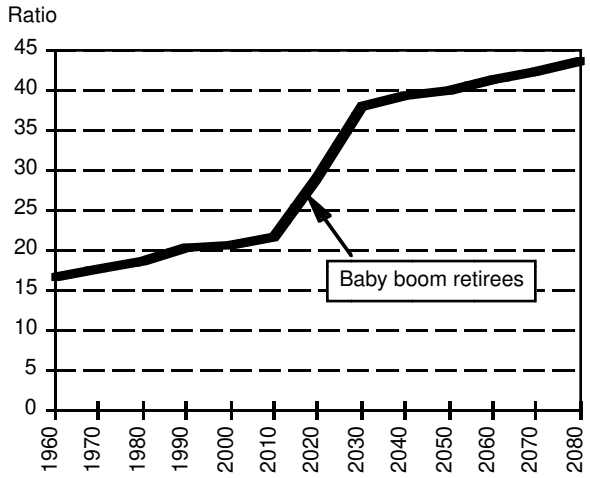
[9]There is by no means a unanimous consensus on the forecasts for labor force participation by the elderly. For example, some suggest that the trend toward early retirement will slow and perhaps reverse in the next few decades, and unemployment should fall among older workers (Levine and Mitchell, 1991).

Chart 2
**Mean Male and Female Life Expectancy at Age 65, 1990–2050**




Source: U.S. Department of Commerce, Bureau of the Census, *Projections of the Population of the United States, by Age, Sex, and Race: 1988 to 2080*, Current Population Reports, series P-25, no. 1028 (Washington, DC: U.S. Government Printing Office, 1989).

Chart 3
**Number of Persons Aged 65 and Over per 100 Persons Aged 18–64, 1960–2080**




Source: U.S. Department of Commerce, Bureau of the Census, *Projections of the Population of the United States, by Age, Sex, and Race: 1988 to 2080*, Current Population Reports, series P-25, no. 1018 (Washington, DC: U.S. Government Printing Office, 1989).

### *Effect of the Federal Government*

**Some estimates show that approximately one-half of the decline in the U.S. national savings rates during the 1980s was a result of the huge government budget deficits, and the other half was due to decreases in private savings (Anderson, 1989).**

According to some policymakers, the federal government can affect private savings in four ways (Kotlikoff and Boskin, 1989). The first concerns the level of government consumption relative to net national product. As the government consumes more, it presumably increases government services, and people may reduce their current expenditures. However, it is difficult to measure this effect. Second, taxes may reduce incentives for individuals to work and save. Government policies that produce an intragenerational redistribution from the rich to the poor represent a third way. Because the poor are more likely to consume a larger percentage of their income than the rich, this type of policy may tend to decrease savings. Due to the liquidity constraints of the poor, intragenerational redistribution is probably not a major determinant of the decline in the U.S. savings rate since 1950.[10]

Finally, government policies may transfer resources from younger to older generations (intergenerational transfers). These policies include the underfunding of the Social Security system, requiring future generations of young workers to pay much higher taxes to fund the elderly's benefits. Kotlikoff and Boskin state: "The Social Security system appears to represent the only (potentially) discrete postwar intergenerational transfer policy capable of producing a major drop in the national saving rate. Simulation studies of the potential savings impact of an unfunded Social Security system suggest a possible reduction in long-run savings of 20 percent to 25 percent."

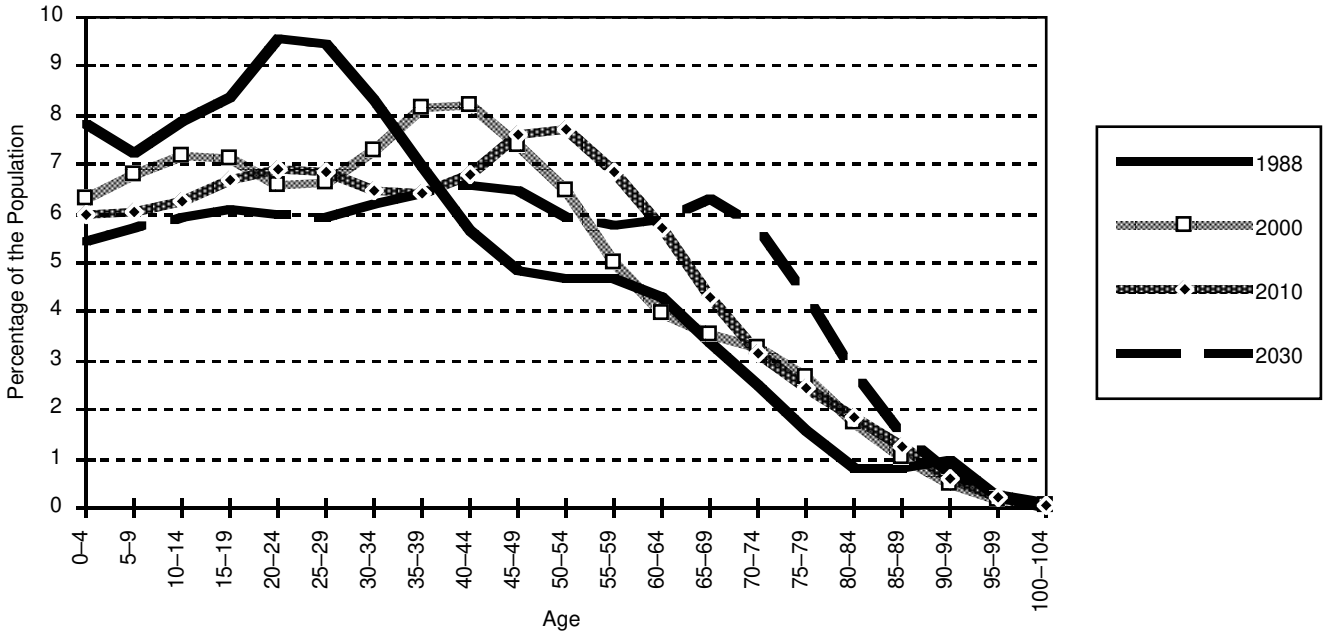
### *Effect of Productivity and Real Wages*

**The low levels of U.S. savings and investment that have prevailed in recent decades have coincided with low rates of U.S. manufacturing productivity growth and diminishing real wage growth.** Chart 5 shows that over the 1960–1990 period, the United States and Canada had smaller average annual increases than did Japan or some European countries (Neef and Kask, 1991).

**Workers in the United States have also experienced a stagnant real (accounting for inflation) hourly compensation in the 1980s.** Real hourly compensation grew substantially until 1978 but then declined throughout 1981, erasing some of the earlier gains. The 1990 real hourly compensation is nearly equal to the levels achieved 12 years earlier (chart 6).

[10]It is expected that the nonpoor will reduce current consumption by approximately the same amount, thus resulting in little if any net savings. This would be the case even though the nonpoor on average consume less of their income than the poor. The nonpoor will realize this is likely to be a multi-year transfer and will adjust their consumption to reflect the present value of the transfers, an amount considerabley larger than simply the current payment.

Chart 4
**Age Distribution of the U.S. Population: 1988, 2000, 2010, and 2030**




Source: U.S. Department of Commerce, Bureau of the Census, *Projections of the Population of the United States, by Age, Sex, and Race: 1988 to 2080*, Current Population Reports, Series P-25, no. 1028 (Washington, DC: U.S. Government Printing Office, 1989).

## ◆ Impact of Pensions on Savings

These same trends also affect the extent to which individuals and the federal government save for retirement through pensions and Social Security. Personal savings are greatly affected by savings for retirement, which, therefore, affect national savings. This section investigates the effects of pensions on retirement income and personal savings.

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**A total of 78 million people participated in private pension plans in 1988, including 40 million participants in defined benefit plans and 38 million in defined contribution plans.**

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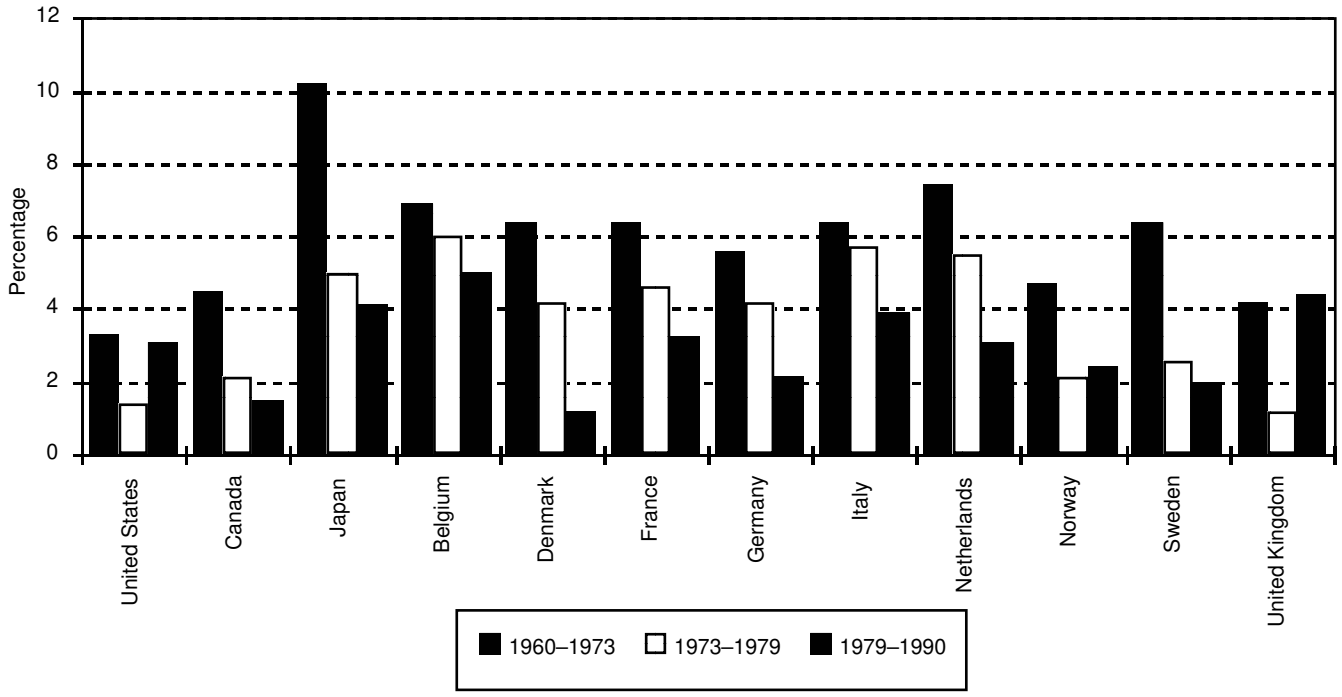
**A total of 78 million people participated in private pension plans in 1988, including 40 million participants in defined benefit plans and 38 million in defined contribution plans. In comparison, the federal retirement systems had 10 million participants in 1988 while state and local government systems had nearly 16 million participants** (Employee Benefit Research Institute, 1992).

Pension assets grew from $1.2 trillion in 1982 to nearly $3.0 trillion by the end of 1990 (table 2). Because the increased level of pension assets has drawn attention to the potential revenue that could be gained by removing the tax deferral on investment income of private pension trusts, it is important to analyze this amount on

Chart 5
**Annual Percentage Changes in Manufacturing Productivity, 12 Countries, Selected Periods, 1960–1990**



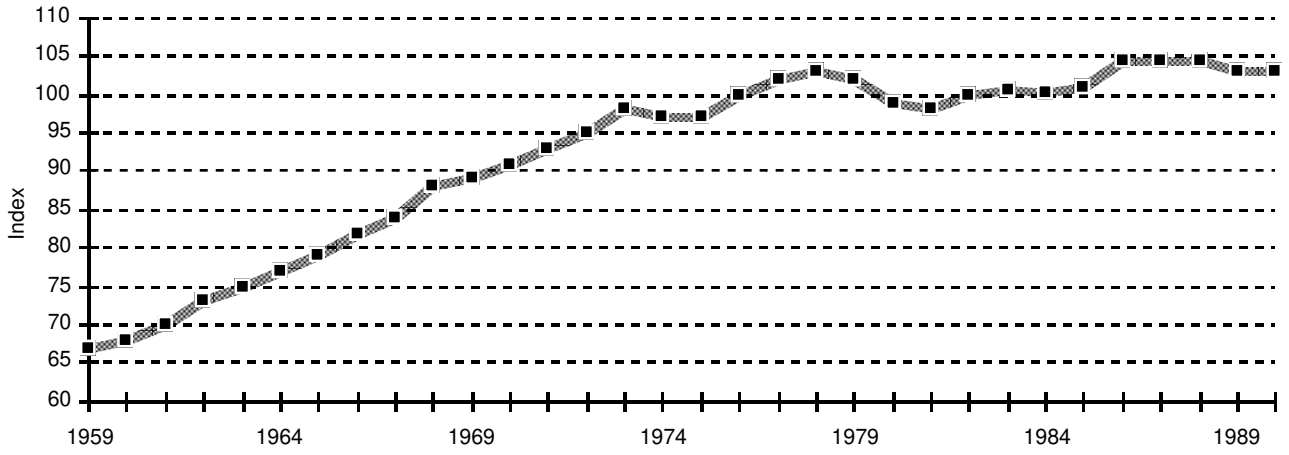

Source: Arthur Neef and Christopher Kask, "Manufacturing Productivity and Labor Costs in 14 Economies," *Monthly Labor Review* (December 1991): 24–37.

a disaggregated basis. This is particularly true if any of the government pension categories will be exempt from paying tax on the income generated by their pension assets.

At the end of 1990, private trusteed pension fund[11] assets made up less than one-half of the total assets in pensions. Single-employer private trusteed defined benefit fund assets, which made up 25.4 percent of total pension assets in 1990, grew at an average annual rate of 8.2 percent from 1982 to 1990. Single-employer private trusteed defined contribution fund assets were 14.6 percent of total pension assets at the end of 1990 and grew at an annual rate of 10.3 percent during the previous eight years. Private trusteed multiemployer pension fund assets, representing only 4.9 percent of total pension assets, grew at a rate of 11.3 percent during the same period (Employee Benefit Research Institute, 1991). Slightly more than 21 percent of total pension fund assets were in private insured pension funds at the end of 1990. These assets grew at an average annual rate of 15.1 percent from 1982 to 1990.

[11]The holdings of private pension plans are broadly categorized into two groups: trusteed funds and insured funds. These funds differ in who manages the funds' assets and who bears the investment risk. Trusteed pension funds are managed by a trustee appointed by the plan's sponsor. Insured pensions funds are managed by life insurance companies. The assets of private pension plans may be held exclusively in either trusteed or insured funds or may be divided between the two types of funds.

Chart 6
**Index of Real Hourly Compensation, 1959–1990**




Source: U.S. President, *Economic Report of the President: The Annual Report of the Council of Economic Advisors* (Washington, DC: U.S. Government Printing Office, 1991).
Note: Compensation includes wages and salaries of employees plus employers' contributions for social insurance and private benefit plans.

Public pension funds include those for federal and for state and local government employees. The federal government retirement fund grew at an average annual rate of 16.5 percent from 1982 to 1990. At the end of that period, these assets made up 8.4 percent of total pension assets. State and local pension fund assets grew at an annual rate of 14.2 percent from 1982 to 1990 and at the end of that period represented 25.1 percent of total pension assets.

Private pensions are an important source of retirement income and are expected to grow. **Approximately 93 percent of married couples received income from Social Security in 1988, and 55 percent received income from employer-sponsored pensions in that year** (Andrews, 1992). Projected forward, these data suggest that 98 percent of the married couples will receive income from Social Security in 2018, and 88 percent will receive income from employer-sponsored pensions. As a percentage of total retirement income, Social Security provided, in aggregate, 34.2 percent of income for married couples in 1988 and is expected to provide 34.8 percent of income in 2018. Employer-sponsored pensions accounted for 18.6 percent of income for this group in 1988 and are expected to provide 25.2 percent of income in 2018 (table 3).

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**Approximately 93 percent of married couples received income from Social Security in 1988, and 55 percent received income from employer-sponsored pensions in that year.**

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Table 4 provides information on the retirement benefit payments currently made for each of these categories. **In 1990, Social Security benefits for retirees accounted for 42 percent of the $403 billion in total benefits. Private pensions accounted for 35 percent, while the federal employee retirement system and state and local employee retirement systems accounted for 13 percent and 10 percent, respectively.**

Table 2
**Financial Assets of Private and Government Pension Funds, 1982–1990**

| Year | Single Employer: Defined benefit | Single Employer: Defined contribution | Multi-Employer | Private Insured | Federal Government Retirement | State and Local Government | Total |
|---|---|---|---|---|---|---|---|
| | | | | ($ billions) | | | |
| 1982 | $399 | $196 | $ 61 | $211 | $ 98 | $262 | $1,227 |
| 1983 | 449 | 239 | 72 | 246 | 112 | 311 | 1,429 |
| 1984 | 460 | 256 | 79 | 286 | 130 | 357 | 1,568 |
| 1985 | 545 | 325 | 98 | 343 | 149 | 404 | 1,864 |
| 1986 | 588 | 359 | 114 | 407 | 170 | 469 | 2,107 |
| 1987 | 598 | 386 | 117 | 460 | 188 | 517 | 2,266 |
| 1988 | 661 | 422 | 129 | 517 | 208 | 606 | 2,543 |
| 1989 | 765 | 466 | 147 | 580 | 229 | 735 | 2,922 |
| 1990 | 754 | 432 | 144 | 641 | 251 | 743 | 2,965 |
| | | | | (percentage of total pension assets) | | | |
| 1982 | 32.52% | 15.97% | 4.97% | 17.20% | 7.99% | 21.35% | 100.00% |
| 1983 | 31.42 | 16.72 | 5.04 | 17.21 | 7.84 | 21.76 | 100.00 |
| 1984 | 29.34 | 16.33 | 5.04 | 18.24 | 8.29 | 22.77 | 100.00 |
| 1985 | 29.24 | 17.44 | 5.26 | 18.40 | 7.99 | 21.67 | 100.00 |
| 1986 | 27.91 | 17.04 | 5.41 | 19.32 | 8.07 | 22.26 | 100.00 |
| 1987 | 26.39 | 17.03 | 5.16 | 20.30 | 8.30 | 22.82 | 100.00 |
| 1988 | 25.99 | 16.59 | 5.07 | 20.33 | 8.18 | 23.83 | 100.00 |
| 1989 | 26.18 | 15.95 | 5.03 | 19.85 | 7.84 | 25.15 | 100.00 |
| 1990 | 25.43 | 14.57 | 4.86 | 21.62 | 8.47 | 25.06 | 100.00 |

Source: Employee Benefit Research Institute, *Quarterly Pension Investment Report*, third quarter 1991 (Washington, DC: Employee Benefit Research Institute, 1991); and Board of Governors of the Federal Reserve System, *Flow of Funds Accounts, Assets and Liabilities Outstanding 1982–1991* (Washington, DC: Board of Governors of the Federal Reserve System, 1992).

As measured by the National Income and Product Accounts (NIPA),[12] retirement programs represent a significant portion of personal savings. In 1982, while the personal savings rate was 8.6 percent of disposable income, employer contributions to private plans and government retirement benefits combined represented 5.1 percent of disposable income (chart 7). However, this figure decreased to 3.8 percent in 1990 as a result of high investment returns and new federal laws that have reduced pension contributions. The personal savings rate experienced an even larger decrease during that period, reaching a rate of 5.1 percent in 1990. Most of the decline from 1982 to 1990 occurred in private plans, with employer contributions declining by 1.2 percent of disposable income. The relative reduction in government retirement benefits contributed 0.1 percent to the decrease.

[12]NIPA are maintained by the Bureau of Economic Analysis of the U.S. Department of Commerce. They show the value and composition of the nation's output and the distribution of income generated in its production. The accounts include estimates of gross domestic product (GDP), the goods and services that make up GDP, national income, personal income, and corporate profits.

There are inherent limitations in using NIPA data as a measurement of the impact of pensions on savings. Although the summation of contributions and investment income might be a suitable proxy for the increase in pension wealth for defined contribution participants, the relationship between these variables in a defined benefit pension plan is not nearly as precise. In fact, as mentioned later in this *Issue Brief*, the Omnibus Budget Reconciliation Act of 1987 has prevented many overfunded defined benefit pension plans from making (tax-deductible) pension contributions for several years, although the growth in the participants' pension wealth has not been modified. Unfortunately, there is no separate treatment of defined benefit and defined contribution plans in NIPA.

Table 3
**Components of Retirement Income, 1988 and 2018**

| | Married Couples | | Unmarried Men | | Unmarried Women | |
|---|---|---|---|---|---|---|
| | Actual 1988 | Projected 2018 | Actual1988 | Projected 2018 | Actual 1988 | Projected 2018 |
| Median Income (1988 dollars) | $22,063 | $31,513 | $8,586 | $17,482 | $7,555 | $10,935 |
| Recipiency | | | | | | |
| Total income | 100.00% | 100.00% | 100.00% | 100.00% | 100.00% | 100.00% |
| Social Security | 93.00 | 98.00 | 91.00 | 97.00 | 91.00 | 97.00 |
| Employer-sponsored pensions | 55.00 | 88.00 | 40.00 | 73.00 | 31.00 | 67.00 |
| Earnings | 35.00 | 32.00 | 17.00 | 13.00 | 11.00 | 9.00 |
| Asset income | 78.00 | 89.00 | 57.00 | 83.00 | 62.00 | 74.00 |
| Share of Income | | | | | | |
| Total income | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| Social Security | 34.20 | 34.80 | 37.90 | 38.90 | 45.90 | 48.30 |
| Employer-sponsored pensions | 18.60 | 25.20 | 19.60 | 30.80 | 13.30 | 7.00 |
| Earnings | 21.40 | 18.50 | 14.90 | 11.60 | 8.50 | 7.30 |
| Asset income | 23.90 | 18.40 | 23.60 | 14.90 | 28.20 | 20.70 |

Source: Emily S. Andrews, "Gaps in Retirement Income Adequacy," mimeograph, 1992.

This analysis may actually underestimate the impact of retirement programs on savings because some components of pension savings are not separately identified in the national accounts. One component not included in chart 7 that has become increasingly important in recent years is the amount of employee contributions to pension plans. Although a recent estimate of this amount is not available, a good proxy for a conservative estimate is the amount of 401(k) contributions for the year. This figure will not represent the entire amount of employee contributions to pension plans because it does not include contributions to defined benefit, money purchase, or after-tax employee savings accounts. Nevertheless, based on Employee Benefit Research Institute (EBRI) tabulations of the May 1988 Current Population Survey employee benefit supplement for private-sector 401(k) plans, this component of pension savings amounted to $19.3 billion (0.47 percent of disposable income in 1988).[13] Public-sector 401(k) contributions represent an additional $4.8 billion. Another $0.2 billion of contributions were made in 1988 by the 919,000 participants in the Federal Employee Retirement Savings program (Employee Benefit Research Institute, 1992).

[13]This estimate is conservative. It is based on the reported percentage of pay contributed, and earnings were limited to a maximum of $999 per week.

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**One component of pension savings that has become increasingly important in recent years is the amount of employee contributions to pension plans.**

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### *Trends in Savings and Pension Flows*

**Various economic, demographic, and legislative factors could have contributed to the large slowdown in growth of private pension contributions mentioned above. One often-cited reason was the substantial**

**reduction in both individual and corporate tax rates in the 1980s, which limited the tax preference granted to pension plans, thus reducing employers' incentives to contribute in excess of the legally required minimum amount (for defined benefit plans).**[14]

Two studies have concentrated on the reason for the decrease in pension contributions in the 1980s. One assumed that the minimum funding requirements (the minimum pension contribution required by law) of the Employee Retirement Income Security Act of 1974 (ERISA) were responsible for the reduction in contributions prior to the Omnibus Budget Reconciliation Act of 1987 (OBRA '87) (Bernheim and Shoven, 1985).[15] Specifing a target saving model and estimating the elasticity of pension contributions to changes in the real interest rate, a one percentage point rise in real interest rates would, in the long run, reduce pension contributions by approximately 20 percent to 30 percent.

Alternatively, an analysis of the impact of capital gains from both equities and bonds on pension contributions reasoned that the reduction in contributions was due more to the combination of the full-funding limitation (the maximum amount that is tax deductible according

[14]There are other public policy ramifications of the trend toward lower aggregate pension contributions, especially for private defined benefit pension plans. The Pension Benefit Guaranty Corporation (PBGC) insures most accrued benefits for participants in these plans, subject to a maximum monthly limit. Most participants are assured by the governmental agency that they will receive at least a portion of their promised benefit even if the sponsor (or in some cases a group of sponsors with common financial interests) has entered into bankruptcy and there are insufficient funds in the pension plan to satisfy the accrued benefits. For a description of how a reduction in pension assets could increase PBGC's liabilities in terms of plans currently terminating and the exposure for future terminations, see Paul Yakoboski, Celia Silverman, and Jack Van Derhei, "PBGC Solvency: Balancing Social and Casualty Insurance Perspectives," *EBRI Issue Brief* no. 126 (Employee Benefit Research Institute, May 1992).

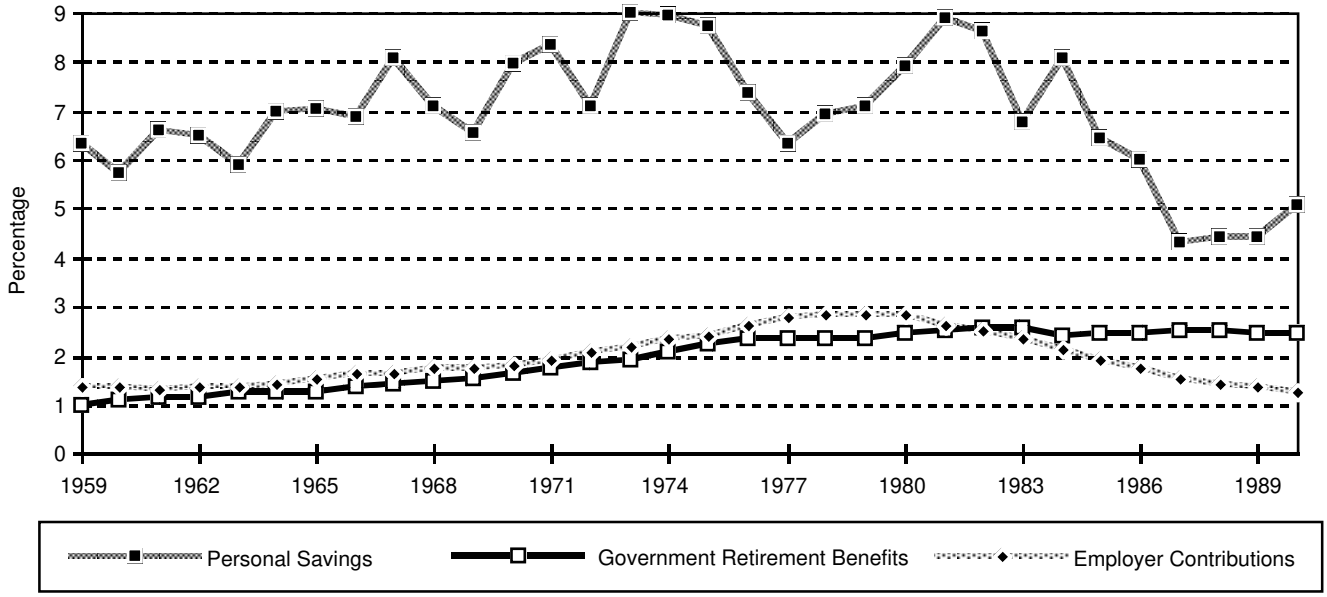
[15]For information on the impact of OBRA '87 on contributions to defined benefit pension plans, see Paul Yakoboski, Celia Silverman, and Jack VanDerhei, "PBGC Solvency: Balancing Social and Casualty Insurance Perspectives," *EBRI Issue Brief* no. 126 (Employee Benefit Research Institute, May 1992).

Table 4
**Retirement Benefit Payments, Selected Years 1960–1990**

| Source of Benefit | 1960 | 1970 | 1980 | 1987 | 1988 | 1989 | 1990 |
|---|---|---|---|---|---|---|---|
| | | | | ($ billions) | | | |
| Private Pensions | $ 1.7 | $ 7.4 | $ 36.4 | $120.8 | $124.1 | $133.6 | $141.2 |
| Federal Employee Retirement[a] | 1.7 | 6.2 | 28.0 | 44.9 | 48.1 | 50.6 | 53.9 |
| State and Local Employee Retirement | 1.4 | 4.0 | 15.1 | 31.2 | 34.1 | 36.6 | 39.2 |
| Subtotal | 4.8 | 17.6 | 79.5 | 196.9 | 206.3 | 220.8 | 234.3 |
| Social Security Retirement Benefit Payments[b] | 7.9 | 18.9 | 74.5 | 140.0 | 148.1 | 157.6 | 168.8 |
| Total | 12.7 | 36.5 | 154.0 | 336.9 | 354.4 | 378.4 | 403.1 |

Source: Employee Benefit Research Institute tabulations of data from the U.S. Department of Commerce, Bureau of Economic Analysis, *Survey of Current Business*, January 1992 (Washington, DC: U.S. Government Printing Office, 1992); and from U.S. Department of Health and Human Services, Social Security Administration, *Annual Report of the Board of Trustees of the Federal Old-Age and Survivors Insurance and Disability Insurance Trust Funds*, selected years (Washington, DC: U.S. Social Security Administration, selected years).
[a]Includes civilian and military employees, including the Coast Guard.
[b]Includes payments to retired workers and their wives, husbands, and children.

Chart 7
**Retirement Components of Personal Savings (other than Social Security) as a Percentage of Disposable Income: 1959–1990**




Source: Employee Benefit Research Institute tabulations based on U.S. Department of Commerce, Bureau of Economic Analysis, *Survey of Current Business*, January 1992 (Washington, DC: U.S. Government Printing Office, 1992); and U.S. Department of Commerce, Bureau of Economic Analysis, *The National Income and Product Accounts of the United States: Statistical Supplement, 1959–1988*, Vol. 2 (Washington, DC: U.S. Government Printing Office, 1992).

to the law) and higher-than-expected returns than to the minimum funding standards (Munnell, 1987). This model emphasized the impact of the (pre-OBRA '87) full-funding limitation on pension contributions and concluded that, in the absence of the stock market boom and the strong bond market, pension contributions would have increased by more than 50 percent in 1986 and the savings rate would have been a full percentage point higher.[16]

[16]Munnell and Cook (1991) use two measures of pension funding to estimate the impact of pensions on personal savings. The first is the percentage of plans with 1,000 or more active participants that have assets greater than accrued liability. The relationship between this variable and savings was negative as expected (as more plans become fully funded, employer contributions will be reduced). The second measure estimated the difference between the liabilities and pension assets of defined benefit plans. The relationship between savings and this pension funding gap was positive as expected.

The recent benefit increases in the private pension system are also a result of demographic and economic trends. The nation's overall work force is aging, with more workers retiring and drawing pension checks. And many workers are retiring earlier, in part because of the increased availability of pension benefits. Furthermore, more rapid withdrawals from pension funds would result if an increasing number of retirees and job changers opt for lump-sum payments rather than for monthly pension checks.

**Post-ERISA legislation could change annual trends in both pension contributions and benefits. For example, TRA '86 may have decreased pension benefit payments at the margin in the near term due to the imposition of a 10 percent penalty tax for early distribution of benefits.** More recently, the Unemployment Compensation Amendments of 1992 imposed

income tax withholding at a 20 percent rate on any distribution that is eligible for rollover treatment but not transferred directly to an eligible plan. As part of the legislation, certain rollover rules were relaxed, allowing any (taxable) portion of a distribution from a pension plan to be rolled over tax free to a qualified plan or an IRA.[17] This should provide incentives to participants experiencing job mobility to defer their plan benefits for retirement as opposed to using them for current consumption.

**Meanwhile, OBRA '87 significantly increased the minimum funding requirements for some underfunded plans, especially for those continuing to increase benefit promises after 1988.** However, it also drastically reduced the full-funding limitation,[18] thus reducing or eliminating deductible contributions for several years for many plans that are overfunded on a termination basis. The net impact of OBRA '87 on contributions has yet to be determined.

### *Behavioral Aspects*

Although there is significant interest in increasing the personal savings rate in the United States, some economists and policymakers have expressed doubts that encouraging private pension growth would contribute substantially toward this goal. The basic thrust of their arguments is that pension plan participants will reduce their own savings in response to improved employer provisions for their retirement income, thus making pension plans a poor tool for increasing national savings.

The proper theoretical analysis of this public policy issue is much more complex, and any attempt to precisely measure the impact of pensions on savings must endeavor to simultaneously answer the following three questions (Munnell and Yohn, 1992):

- By how much do employees receiving part of their compensation in pension promises reduce their other savings?
- To what extent do employers carry out the direct savings by investing in pension funds or company assets?
- Do shareholders alter their direct savings to compensate for any increase in unfunded pension liabilities?

The following discussion addresses the first question, but there are insufficient data at this time to answer the other two. Any measure of the employer's response to pensions would require knowledge of how increased pension liabilities have been offset by a combination of savings in the pension fund and increased corporate nonpension savings.[19] Given the absence of any hard evidence on the second question, determining the answer to the third question becomes problematic. However, several academic studies[20] have assumed the sponsor takes no offsetting action in nonpension savings and determined that share prices fall in response to a shortfall of pension assets relative to pen-

[17] Certain technical exceptions exist. First, this rule does not apply to certain periodic payments such as a life annuity. Also, it cannot be used as a way of circumventing the minimum distribution requirements for participants over age 70 1/2 .

[18] The full-funding limitation serves as a cap on the annual amount the plan sponsor can contribute on a tax-deductible basis to a defined benefit pension plan. Prior to OBRA '87, this cap was basically a function of the plan's ongoing liability. In other words, a defined benefit pension plan that awarded monthly retirement benefits based on a participant's salary in the years immediately preceding retirement would assume, quite logically, that young employees would experience wage growth prior to retirement. This results in a larger pension liability than would be the case if the sponsor assumed the plan would terminate immediately, and the participant's final average compensation would be frozen at the current age. Although the current law is still based in part on this concept, a second limit based on the assumption that the plan terminates immediately is also imposed. This tends to eliminate a well-funded plan's ability to make deductible contributions for several years, particularly if the participants are relatively young and the plan has a low ratio of retirees to active participants.

[19] See Munnell and Yohn (1992) for an amplification of this point.

[20] See Oldfield (1977), Feldstein and Seligman (1981), Feldstein and Morck (1983), Gersovitz (1982) and Bulow, Morck and Summers (1987).

sion liabilities. Unfortunately, this assumption does not answer the question of whether shareholders respond to a drop in the value of their equity holdings by increasing their direct savings.

***Theoretical Considerations*—**Much of this analysis is based on the life-cycle model (Modigliani and Brumberg, 1954). This model assumes that individuals base their lifetime consumption path on current wealth and expectations for future income, prices, and rates of return. Individuals who expect to have a long retirement period in which consumption exceeds earned income must provide for their economic security by accumulating wealth during their working careers. This may be accomplished through personal savings, employer-sponsored savings (pensions), or government-sponsored savings (Social Security).

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**Employees do not completely offset increases in their pension savings with decreases in nonpension savings in an effort to keep their total savings at a constant level.**

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Even if the basic assumptions used in this analysis are correct,[21] it is extremely important to note that **employees do not completely offset increases in their pension savings with decreases in nonpension savings in an effort to keep their total savings at a constant level.** There are several important reasons for this behavior (Munnell, 1982).

*Favorable Tax Provisions*—The deferral of taxation on employer contributions, tax deferral of investment income on pension trust assets, and the possibility of lower tax rates at retirement all act to increase the effective rate of return on savings through a pension plan. These provisions may stimulate savings; however, secondary considerations, such as the government's reaction to the decreased tax revenue and the manner in which the increased effective rate of return enters into individual savings decisions, must also be analyzed.

The studies discussed later in this section were conducted prior to the enactment of TRA '86. This change in the tax law reduced the highest tax bracket for individuals to 28 percent (although, through subsequent legislation, many taxpayers will actually have an effective marginal tax rate of 31 percent). It also transformed the federal income tax system into a modified flat tax system in which many taxpayers will be taxed at the same rate, regardless of whether they receive their money as wages while they are still employed or as benefits after they retire. This does not necessarily suggest that the tax advantages of private pension plans have ceased to be an important advantage for employees. Even if all money received from a pension plan is taxed at the same rate, the fact that investment income can accumulate at a before-tax rate of return, instead of an after-tax rate of return, prior to the time it is paid in the form of benefits (and taxed) increases the eventual amount the employee receives.[22]

*Lack of Access to Pension Accumulations Prior to Retirement*—**Employees may treat pension savings as a**

[21] Another body of literature has been developed that disputes the notion that retirement is the primary motivation for accumulating retirement savings. Instead, motivations such as intentional accumulation for intergenerational transfers and precautionary savings have been modeled and, in many studies, found to provide a better explanation of the observed trends in earnings and consumption. A critical analysis of this literature is beyond the scope of this *Issue Brief*; see Kotlikoff (1988) for a review of the literature.

[22] This assumes that, in the absence of a pension plan, at least a portion of the employee's savings would be currently taxable. The overall effect of the pension tax shelter on constant income would be reduced to the extent that the nonpension savings would be generated through unrecognized capital gains or equivalent tax-sheltered transactions. This could be accomplished (and in many cases without the maximum limitations imposed on private pension plans) through the purchase of cash-value life insurance, real estate, and stocks. It can also be accomplished through the purchase of tax-exempt bonds; however, the prices of these securities are also bid up to yield a rate of return approximately equivalent to the after-tax returns on taxable bonds of similar risk and maturity.

**substitute for nonpension savings if they can easily and without cost borrow against accrued benefits or account balances for consumption purposes prior to retirement.** Although the employer has the option of providing partial access to these amounts via plan loan provisions or withdrawal provisions (in profit-sharing plans), this is by no means universal. As a result, some employees will be unable to reduce their accumulated retirement savings to their preferred level and increase their current capital accumulation as they could do if there were no restrictions on early distributions. Moreover, the trend in recent years toward restricted access to retirement funds seems to be growing, as evidenced by the 10 percent penalty excise tax on early distributions. This tax will generally make distributions prior to age 59 1/2 more expensive for the participant.

*Induced Retirement*—It is possible that workers who are covered by pensions have an incentive to retire earlier than they otherwise would. With a shortened earning period and a longer retirement period, workers would have an incentive to increase their savings rate. Thus, assuming a sufficient amount of wage growth and/or a higher population growth rate among workers than among retirees, there would be an increase in aggregate savings.

*Uncertainty About Benefit Receipt and Amount*—Employees may underestimate the value of their pensions due to the presence of vesting requirements, lack of indexing for terminated vested employees, and uncertainty as to future rates of inflation (especially during retirement). As a result, their offset of other savings may be based on inaccurate assessments of the true rate of their pension accumulations.

***Empirical Evidence on the Effect of Pension Plans on Household Savings*—**Some of the considerations mentioned above indicate that pensions will increase personal savings while others suggest an opposite prediction, making the net result ambiguous. Several studies have been conducted to resolve this theoretical dilemma. **Although early studies (Cagan, 1965 and Katona, 1964) suggested that participation in a pension plan would *directly* increase personal savings, subsequent estimates of the amount of increase in total savings from pensions have ranged from a low of $0.32 cents per dollar of pension savings to a high of $0.84.**[23]

A summary of these studies (Korczyk, 1992) finds that the extreme variance in these findings can largely be explained by the choice of the sample population. Three of the four studies that found increases in total savings from pensions of less than $0.75 per dollar of pension savings limited their sample to older workers. Diamond and Hausman (1984) and Munnell (1982) studied the behavior of households headed by men aged 45–59. They found increases in total savings from pensions of $0.42[24] and $0.38 per dollar of pension saving, respectively. Avery, et al. (1986) examined only the behavior of persons aged 50 and over who were still working and found increases in total savings from pensions of $0.32 per dollar of pension saving.[25]

Korczyk correctly points out that studies based on a limited segment of the population cannot generally be extrapolated to the entire work force. Furthermore, she points out that mature workers may be more likely to reduce their personal savings for pension savings for the following reasons:

- their retirement plans and expected resources may be clearer than for other employee groups;
- they may have more liquid savings that can be adjusted in response to expected pension benefits; or
- they may already be in the mature phase of their life in which current expenses exceed current income.

[23]One study failed to find any tradeoff between pension wealth and other wealth (Blinder, Gordon and Wise, 1981). However, the study was based on financial assets and is not directly comparable with the other analyses presented in this section.

[24]This offset was calculated by Munnell (1982), based on Diamond and Hausman (1984).

[25]The fourth study found increases of $0.32 to $0.40 per dollar of pension saving, using a sample more representative of all workers. See Feldstein (1978).

Studies using broad segments of the work force (Hubbard, 1986 and King and Dicks-Mireaux, 1982) found much larger contributions to total savings: $0.84 and $0.76 per dollar of pension savings, respectively.

## ◆ Impact of Social Security on Savings

Social Security also contributes a large portion to retirement income (tables 3 and 4). Historically, the impact on savings between this program and private pension plans has been considerably different because of the lack of asset accumulation in the Social Security program. In other words, the right to future Social Security retirement income for current beneficiaries was not funded by financial assets but rather through the FICA taxes paid by current workers.

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**The 1977 and 1983 amendments to the Social Security Act moved the Social Security program from pay-as-you-go financing to partial-reserve funding (or prefunding).**

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The program has recently entered a new phase of development. **The 1977 and 1983 amendments to the Social Security Act moved the Social Security program from pay-as-you-go financing (in which annual income to the Old Age, Survivors, and Disability Insurance (OASDI) trust fund approximates annual outgo) to partial-reserve funding (or prefunding). These amendments significantly revised the benefits levels, scheduled tax rates, and the future normal retirement age (the age at which an individual is entitled to receive full monthly retirement benefits).** These changes are a result of a federal policy that was designed to maintain a stable payroll tax rate over a period during which the ratio of contributors to beneficiaries is projected to change significantly because of expected demographic changes. These reserves are a potential pool of investment funds that some believe could be used to prefund, in a sense, the baby boom generation's retirement by increasing capital formation and future workers' productivity if the federal government operates with a balanced budget (Aaron, Bosworth, and Burtless, 1989). According to intermediate assumptions, the contingency fund ratio[26] of the combined OASDI[27] trust fund will peak at 334 percent (enough to cover expenses for more than 3 years) in 2015 and fall below 34 percent in 2035, leading to exhaustion of the trust fund in 2036. However, it appears that projections based only on the intermediate assumptions may be too optimistic.[28] In comparison, the fund is expected to be exhausted by 2019 under the pessimistic assumptions.

**Under intermediate assumptions, the cost rate of the combined OASDI trust fund as a percentage of taxable payroll is projected to rise from 11.50 percent in 1992 to 18.35 percent in 2070.** The trust fund is invested in special issue Treasury securities that must be redeemed by the Treasury to provide cash benefits. Excluding interest income to the combined OASDI trust fund, the funds are projected to show a negative balance in 2020 under intermediate assumptions and in 2001 under pessimistic assumptions. The federal government will then have to start redeeming Treasury bonds by raising taxes, reducing other federal spending, or selling additional bonds on the open market.

Thus it appears that adjustments to the OASDI program will have to be made either by cutting benefits or raising taxes. Indeed, this outcome seems more likely when the Medicare Hospital Insurance (HI) trust fund is included in the analysis. Under intermediate assump-

[26]The contingency fund ratio represents assets at the beginning of the year as a percentage of disbursements during the year.
[27]Hospital Insurance is not included in this discussion.
[28]For a discussion of the various assumptions used in the projections and documentation of this assertion, see Michael A. Anzick, "1992 Annual Reports Revise Date of Social Security and Medicare Trust Funds' Exhaustion" (*Employee Benefit Notes*, June 1992): 3–7.

tions, this fund will be depleted by 2002; pessimistic assumptions accelerate the depletion by two years. When interest earnings are excluded, the HI trust fund is projected to begin showing a negative balance in 1994 under intermediate assumptions and in 1993 under pessimistic assumptions.[29]

The potential for benefit cuts may have implications on savings because some individuals may decide to increase their personal savings to add to their retirement income.

### *Funding and Investment Effects*

**A study investigating the funding and investment of the Social Security trust fund advocates keeping the program in close actuarial balance but states that a schedule of tax increases higher than are currently planned would be needed to achieve this balance**[30] (Aaron, Bosworth, and Burtless, 1989).

The authors preferred that the resulting Social Security surpluses be used to increase national savings to prepare for the large benefit payments that will be needed when the baby boom generation retires. Their model contrasted the baseline case in which the *total* federal deficit equaled 1.5 percent of GNP each year with an alternative in which the *non-OASDI* deficit is held at 1.5 percent of GNP. Under their alternative, the predicted OASDI surplus is set aside as increased national saving rather than being used to finance expenditures in other government accounts. They state: "Our results indicate that the added future consumption that results from saving and investing today's Social Security surplus is more than enough to offset all of the increased burden on future workers of providing pensions for a larger population of retirees."[31] Their model is sensitive to changes in the assumptions about productivity. The burden of future generations will also be manageable if productivity recovers to pre-1973 levels, even if current taxes remain.

**Even if the trust fund accumulation is reflected in government savings, national savings may not increase or may increase by a smaller amount** (Anderson, 1989). The following four reasons explain why increased public sector savings may be offset by a reduction in private savings.

First, individuals may perceive that an increase in government savings increases their or their heirs' wealth and may reduce their own savings accordingly. Second, the increase in public savings may tend to reduce interest rates, encouraging households and businesses to borrow more and save less. Third, if government fiscal surpluses reduce aggregate demand and total spending—that is, if the surpluses create a fiscal drag on the economy that is not offset by monetary policy, increased investment, or other spending—disposable incomes may be reduced, reducing individual and business savings. Finally, if the savings achieved with higher payroll tax rates lower income, individuals may have no money available to save.

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[29] References to the OASDI trust funds are from the U.S. Department of Health and Human Services, Social Security Administration, *Annual Report of the Board of Trustees of the Federal Old-Age and Survivors Insurance and Disability Insurance Trust Funds* (Washington, DC: Social Security Administration, selected years). References to the HI trust fund are from U.S. Department of Health and Human Services, Health Care Financing Administration, *Annual Report of the Board of Trustees of the Federal Hospital Insurance Trust Fund* (Washington, DC: U.S. Department of Health and Human Services, selected years).

[30] Actuarial balance is achieved when the present value of resources (initial balance plus projected future tax collections) is above 95 percent of the present value of future costs.

[31] Aaron, Bosworth, and Burtless further point out that the Social Security system will have access to the predicted reserves under either of the two models. However, if the reserves are simply used to finance expenditures in other government accounts, they will not have changed the nation's rate of savings, capital formation, or future income.

Other economists have offered their predictions concerning the impact of the Social Security surplus shrinking the traditional unified budget deficit (which includes Social Security receipts and payments). For an explanation of the potential financial transactions that will result when the baby boomers ultimately receive their Social Security retirement benefits, see Kotlikoff (1992, pp. 60–61).

In addition to the effects produced by the accumulation of a trust fund, the investment of the fund can also have far-reaching ramifications. One suggested theory is that the investment in securities of government-sponsored enterprises, such as the Federal Home Loan Bank Board, the Federal National Mortgage Association, and the Student Loan Marketing Association may prevent the reserves from being used to pay for current government activities (Aaron, Bosworth, and Burtless, 1989). Investment in corporate securities may or may not increase investment or savings, but it could possibly create political problems involving such issues as voting the proxies of the stocks held.

**The improved economic conditions that would result from investing the trust fund in the United States might increase the Social Security benefits owed to future retirees.** Although these possible increases in benefits could be avoided by investing the surpluses overseas, the largest increases in U.S. wages, compensation, and productivity would be achieved by investing them in the United States.

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**The improved economic conditions that would result from investing the trust fund in the United States might increase the Social Security benefits owed to future retirees.**

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*Public Policy Alternatives*

There are various public policy alternatives concerning the future of the Social Security system. One policy study (Kotlikoff and Auerbach, 1989) looked at two different demographic simulations involving the birth rate: a bust simulation and a bust-boom-bust simulation. Each of these simulations was used to forecast how different public policies would affect the private savings rate (among other variables) over the next 150 years, the current year being year 0. The bust simulation assumed a sudden and permanent reduction in the birth rate, while the bust-boom-bust simulation assumed a decline and increase in the birth rate followed by a permanent drop. The simulations indicated that a policy of adjusting the payroll tax upward to meet required benefit payments did not lead to an increase in long-run lifetime expenditures. However, the following public policy simulations did lead to a 4 percent long-run increase in lifetime expenditures on consumption and leisure:

- decreasing the replacement of preretirement pay,
- immediately increasing the retirement age,
- gradually increasing the retirement age, and
- fully taxing Social Security benefits.

This potential increase would be gained at the expense of those who would receive reduced benefits during the transition period.

## ◆ Effect of IRAs and Other Defined Contribution Plans on Savings

In addition to lower personal tax rates, **TRA '86 includes other provisions that could affect the impact of retirement plans on the savings rate. One provision that could reduce saving incentives is the restriction on the deductibility of IRA contributions, which was enacted at least partly in response to the contention that IRAs were simply a tax break for the wealthy.**[32]

[32]However, individual returns from 1984 reveal that returns with adjusted gross income in excess of $75,000 accounted for only 11.89 percent of the payments to an IRA in that year.

Under restrictions beginning in 1987,[33] 63 percent of all workers aged 21–64 were eligible for a full $2,000 IRA deduction in 1987 (compared with 95 percent if the deduction eligibility had not been changed), 58 percent were eligible in 1991, and a decline to 52 percent is expected by 1995 (Salisbury, 1991).[34] As a result, deductible contributions to IRAs fell from $38.2 billion in 1985 (Salisbury, 1991) to $9.9 billion in 1990 (Gross, 1992).

Economists are divided in their interpretation of the impact of IRAs on saving. Some assume that IRA saving is primarily a transfer of existing savings from a taxable to a tax-sheltered instrument. Others believe that savings are sensitive to after-tax return and that IRAs increase retirement savings.[35] Additional research appears to support the latter view (Feenberg and Skinner, 1989; Venti and Wise, 1990, 1991; and Carroll and Summers, 1987)

**There appears to be little question that IRA contributions are substantial.[36] Instead, discussion centers on whether IRA contributions represent new savings.** Some point out that IRAs can be financed by any combination of the following sources: tax savings; shifting existing assets into IRAs; borrowing; and diverting new savings into IRAs or reducing consumption (Gravelle, 1991). For private savings to increase, some of the IRA contributions must come from reduced consumption. An increase in overall savings will require that private savings increase by more than the tax savings. Standard economic models suggest that IRAs will be unable to stimulate savings to any large extent and might even cause savings to decrease due to the fact that investing in a tax-deferred account will allow an individual to reach a particular target savings level with a smaller initial contribution (or series of contributions).[37] However, one empirical study (Venti and Wise, 1991) suggests that only $0.08 of every dollar contributed to an IRA represents a shuffling of previous savings. Reduction in consumption accounted for $0.57, and the remaining $0.35 represents a reduction in taxes.

Additional empirical evidence suggests that IRAs play a positive role in personal saving (Feenberg and Skinner, 1989). They examined approximately 4,000 Internal Revenue Service (IRS) tax returns between 1980 and 1984 and found that IRA contributors tended to increase their *taxable* saving by more than those that did not contribute to an IRA.[38] The authors also found

[33] A person may still make an IRA contribution each taxable year of $2,000 or 100 percent of income, whichever is less. However, beginning in 1987, if either the taxpayer or his or her spouse is an active participant in an employer-maintained plan for any part of a plan year, the $2,000 figure is reduced (but not below zero) by 20 cents for each dollar the adjusted gross income exceeds a specified threshold. This threshold is $40,00 for a taxpayer filing a joint return, $0 for a married individual filing a separate return, and $25,000 for any other taxpayer.

For example, an employee covered by an employer's qualified plan may still make a full $2,000 IRA deduction if his or her income is $25,000 or under ($40,000 for married couples filing a joint income tax return). For employed individuals earning $25,000–$35,000 ($40,000–$50,000, for couples filing joint income tax returns) covered by their employers' retirement plan, IRA contributions will be proportionately reduced and phased out entirely at $35,000 (or $50,000 for joint income tax filers). Note that married persons filing separate returns are extremely limited in making deductible IRA contributions. Employees covered by their employers' retirement plan earning over $35,000 ($50,000 for joint filers) are not eligible to make tax deductible IRA contributions.

[34] The numbers decline over time because the TRA '86 income thresholds are not indexed for inflation or income growth.

[35] One theory suggests that IRAs might affect savings through psychological mechanisms (i.e., taxpayers facing a 40 percent marginal tax rate would rather make a $2,000 contribution to an IRA than pay an extra $800 in federal taxes) (Freeman and Skinner, 1989). This theory is based in part on finding a correlation between owing tax and the size of the IRA contribution. However, the evidence on IRAs that has been posited in support of these models does not refute the life cycle model (Burman, Cordes, and Ozanne, 1990).

[36] By 1986, IRA contributions accounted for approximately one-fourth of all personal savings (Wise, 1991).

[37] For a discussion of the conventional economic view of IRAs as well as a critical theoretical and econometric review of the other studies cited in this section, see Gravelle (1991).

[38] The results continued to hold when only families with the same initial wealth were compared. The authors advance the notion that, if IRA contributions had merely resulted from a transfer of taxable saving to tax-deferred savings, the opposite result would be expected; however, they acknowledge that the results may simply reflect the fact that savers save through both forms.

evidence of continued contributions among a sample of initial contributors in 1982. A total of 61 percent of their sample contributed for five consecutive years until IRA deductibility was modified by TRA '86. Although this evidence falls short of proving that the IRA contributions did not come from existing assets, other results suggest that the median liquid wealth holdings of IRA contributors was only $8,500 in 1982 (or less than 5 years of the $2,000 maximum contributions) (Venti and Wise, 1991).

The conclusion that IRA contributions largely represent new saving is based on the following evidence (Venti and Wise, 1991):

- The percentage of households saving in non-IRA forms of financial assets remained essentially constant at approximately 30 percent, while those making IRA contributions increased from 3 percent to 20 percent between 1980 and 1986.

- The average median level of IRA assets in households with IRA accounts increased from approximately $2,000 in 1982 to $8,000 in 1986. However, there was no evidence for substitution between IRAs and other forms of financial assets in these households as their non-IRA balances increased from approximately $6,500 to $8,250 during this period. The relatively low balance of non-IRA financial assets also suggests that these individuals were saving significantly less than $2,000 per year (the maximum annual IRA contribution per individual).[39]

- By 1986, the median IRA balance for contributors was larger than their median non-IRA balance in 1983. This presents further evidence against the notion that existing assets were merely shifted into IRAs.

- When households that had not been making IRA contributions did contribute, they reduced non-IRA saving by only a small amount. Conversely, when households that were contributing switched to noncontributor status, they increased non-IRA saving by only a small amount.

- **Econometric results show that without IRA accounts, the typical contributor would save $0.03 to $0.05 of a dollar increase in income. If there were no IRA limit, this same group would save more than $0.20 of a dollar increase in income.**

Another set of research (Carroll and Summers, 1987), shows that after moving in tandem for almost 25 years, the private savings rates in the United States and Canada diverged dramatically after 1975, following expansion of the Canadian IRA program.[40] Increases (found) in tax-sheltered assets (measured by contributions to IRAs or their Canadian equivalent) are associated with greater than one-to-one increases in total personal savings. However, the significance of this finding disappears when the U.S.-Canadian net wealth differential is added to the model (Altig, 1990).

A study conducted by EBRI in 1984 found that the marginal tax rate appeared to affect the decision whether or not to make a contribution to an IRA but did not affect the size of the contribution. This study also found that low-income persons were unlikely to contribute to an IRA, and those without a private pension were no more likely than those with a pension plan to make a contribution. In fact, those with pen-

[39]The latter point is particularly important because an optimal savings incentive will operate primarily at the margin (e.g., only amounts in excess of a floor will be eligible for special treatment). If IRA contributions are primarily due to transactions from individuals who save more than the $2,000 limit annually, the marginal saving will not be affected. One report shows that only 25 percent of IRA contributions in 1983 are from returns that made less than the maximum IRA contribution (Galper and Byce, 1986). However, this observation was very early in the period in which IRA contributions were fully deductible, and the large number of individuals making the full contribution may be a temporary phenomenon if individuals were shifting assets.

[40]Canada has a program comparable to the IRA, referred to as registered retirement savings plans (RRSPs). The maximum individual limit was increased from $3,500 to $15,000.

sions were slightly more likely to make a contribution. Whether a person made a contribution and the size of that contribution were largely dependent on income and, to some extent, demographic characteristics.[41]

**Whereas eligibility for IRAs is nearly universal, this is not the case with employer-sponsored 401(k) plans, which offer similar types of tax advantages to employees.** Although 401(k) plans can be structured in a variety of ways (including plans consisting entirely of employee contributions), approximately one-half (51 percent) of nonretired respondents in a recent survey said neither their employer nor their spouse's employer offered such a plan. Twenty-seven percent said that their employer offered a 401(k) plan, 10 percent said their spouse's employee did, and 6 percent said both their and their spouse's employer offered this type of plan. Individuals most likely to say they did ***not*** have access to an employer-sponsored 401(k) type of savings plan were those with annual income less than $20,000 (69 percent), those with less than a 12th grade education (69 percent), and unmarried individuals (58 percent) (Employee Benefit Research Institute/The Gallup Organization, Inc., 1992).

The impact of 401(k) contributions on savings, unlike that of IRAs, has not been subject to empirical investigation. There are important structural differences between these two retirement arrangements that would be expected to result in different influences on saving. For example, account balances in IRAs can be withdrawn at any time (although they, like 401(k) plan distributions, will generally be subject to a 10 percent penalty tax if taken prior to age 59 1/2), whereas the ability to withdraw many types of 401(k) distributions is severely limited for young workers. Moreover, the annual contribution limit per individual is more than four times larger for 401(k) plans than for IRAs, and many employers make a matching contribution when the employee contributes. Thus 401(k) contributions are less likely than IRAs to result in a reshuffling of assets from taxable to tax-sheltered investments, because individuals would exhaust their current stock of liquid assets more rapidly if they contributed the maximum.

**However, given the basic similarities in the tax treatment of 401(k) plans and IRAs (especially for individuals able to take a deduction for their IRA contribution), a first-order approximation of the effect can be obtained by assuming that the Venti and Wise (1991) findings for IRAs can be applied to 401(k) plans. If 57 percent of the employees' 401(k) contributions in 1988 represented new savings, a total of $11.1 billion of new savings arose from private-sector 401(k) plans, while public-sector plans provided an additional $2.7 billion.**

## ◆ Conclusion

Over much of the last decade, pension assets have represented a major part of national savings. Savings are believed to lead to increased productivity and higher real wages. The United States has experienced a declining savings rate during the past decade, and in terms of international comparisons the U.S. savings rate is historically low. As policymakers consider new methods of increasing savings, the pension system, including Social Security, is often seen as a possible avenue to achieving this goal. A logical first step is to investigate how past legislation has affected pensions and savings.

Legislation in the 1980s has greatly influenced pension programs. From ERTA, which expanded IRAs to all pension plan participants, to the Omnibus Budget Reconciliation Act of 1990, Congress has changed some aspect of the retirement system almost annually. Additionally, changes have been made to the Social Security system to prepare for the large increase in

[41] For more information on the characteristics of IRA participants, see Salisbury, 1984 and 1989. Other studies (O'Neil and Thompson (1987), Collins and Wyckoff (1988), and Long (1990)) focus on the factors that affect a person's decision to contribute to an IRA.

benefits that will be needed when the baby boom generation retires. The separate and combined effects of these legislative actions on savings can be estimated, although they are difficult to quantify because they are interrelated and embedded in the economy.

In addition, the retirement income system is very complex, covering many different groups of people and encompassing different investment strategies. Regardless of these measurement and evaluative limitations, pension assets are a large component of savings. Future legislative action affecting pensions and the Social Security system demands careful consideration because they are certain to impact national savings, economic security, and the well-being of millions of workers and retirees.

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