

August 2000

# PENSION PLANS

## Characteristics of Persons in the Labor Force Without Pension Coverage



GAO

Accountability \* Integrity \* Reliability



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## Abbreviations

BLS	Bureau of Labor Statistics
CPS	Current Population Survey
SSI	Supplemental Security Income

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B-284459

August 22, 2000

The Honorable Major R. Owens  
Ranking Minority Member  
Subcommittee on Workforce Protections  
Committee on Education and the Workforce  
House of Representatives

The Honorable Robert Andrews  
Ranking Minority Member  
Subcommittee on Employer-Employee Relations  
Committee on Education and the Workforce  
House of Representatives

People who retire rely on income from pensions, Social Security, personal savings, and—to the extent they are willing and able to continue working—wages and salaries.<sup>1</sup> The dramatic and continued growth in the size of the nation's elderly population, and the resulting stress on Social Security's finances, may portend greater reliance on other resources, such as pensions, for the economic well-being of people who retire.

In recent decades, the Congress has enacted legislation to encourage pension sponsorship and participation. However, questions remain about the portion of the labor force not covered by pension plans and retired people who lack pension income. You asked us to provide information concerning (1) the proportion of the labor force without pension coverage and how that proportion has changed over the past decade, (2) the characteristics of workers in that labor force, and (3) the proportion and characteristics of retired people who lack pension income or pension assets.

To provide this information, we analyzed data from the Current Population Survey (CPS), conducted by the Bureau of the Census for the Bureau of Labor Statistics (BLS). For our analysis, we developed two regression

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<sup>1</sup>While Social Security coverage is mandatory and nearly universal, it is not designed to provide adequate retirement income by itself. Pensions, personal savings, or earnings from work are usually needed to fill the gap between Social Security benefits and an adequate retirement income.

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models based on CPS data that examine the association between various demographic and other characteristics and the lack of pension coverage. We also reviewed studies and talked to labor experts in government, the private sector, and academia to collect information on the reasons why certain characteristics are associated with the lack of coverage. We conducted our work between August 1999 and April 2000 in accordance with generally accepted government auditing standards. See appendix I for our scope and methodology.

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## Results in Brief

About 53 percent of the employed labor force lacked a pension plan in 1998, a decrease in those without coverage of 5 percentage points from 10 years earlier. This improvement in pension coverage may stem from the economic expansion under way since 1991 that has encouraged firms to offer pensions as a part of their compensation packages and from an increased interest in pension coverage by persons in the labor force. About 39 percent of the employed labor force lacked a pension plan because they worked for firms that did not sponsor a plan, while 14 percent lacked a plan because they were not eligible or chose not to participate in their firm's plan.

A few characteristics describe the large majority of persons in the employed labor force who do not have a pension plan. In 1998, about 85 percent of employees not in a firm's plan had one or more of the following characteristics: They had relatively low income, were employed part time or part of the year, worked for a relatively small firm, or were relatively young. In that year, for example, 40 percent of all employees earned less than \$20,000, and 81 percent of them lacked pension coverage. Similarly, 22 percent of all employees worked for firms that had fewer than 25 employees, and 82 percent of them lacked pension coverage. These characteristics appear to be associated with an employee's desire for, or ability to take advantage of, pension coverage and a firm's willingness or ability to provide coverage. For example, persons earning less than \$20,000 per year may have insufficient income to both pay current expenses and save for retirement. The per capita cost of sponsoring a pension plan may be higher for smaller firms than for larger firms.

Our analysis indicates that in the past, many workers failed to earn a pension benefit during their work lives. In 1998, for example, about 48 percent of persons who had retired lacked pension income or annuities. Retired people without pension income were more likely to be single, female, less educated, and Hispanic or not white. Additionally, retired

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persons who lacked pension income were more likely to be poor. About 21 percent of retired persons without pension income had incomes below the federal poverty threshold, compared with 3 percent with pension income.

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## Background

The probability that a person's income will begin to decrease at a certain age fosters economic insecurity for many in the labor force.<sup>2</sup> Employee pension plans are a key component of the nation's multifaceted retirement income security system—Social Security, pensions, personal savings, and to the extent retired persons are willing and able to continue working, wages and salaries—designed to address this issue. Participation in employee pension plans provides a structured mechanism for persons in the labor force to save for retirement. Income from such plans can be an important factor in determining whether people can maintain their preretirement standard of living after they retire.

Recognizing the importance of pension income to economic well-being, the federal government uses the income tax system to encourage firms to sponsor and employees to participate in such plans. At about \$76 billion in 2000, tax preferences for employer pension plans are the single largest tax expenditure, exceeding tax subsidies for home mortgages and health benefits.<sup>3</sup> These tax benefits seek to raise private saving for employee retirement and are structured to strike a balance between providing incentives for firms to start and maintain tax-qualified plans and ensuring that lower-income employees receive an equitable share of the subsidy.

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<sup>2</sup>BLS includes in the labor force all members of the civilian, noninstitutional population who are aged 16 or older and either working (employed) or actively looking for work (unemployed).

<sup>3</sup>The Joint Committee on Taxation has also estimated that tax expenditures were \$5 billion for Keogh plans for the self-employed and \$12.2 billion for individual retirement plans. Joint Committee on Taxation, *Estimates of Federal Tax Expenditures for Fiscal Years 2000-2004*, JCS-13-99 (Washington, D.C.: Dec. 22, 1999).

The Revenue Act of 1921 initiated the preferential tax treatment of pension plans, and the Revenue Act of 1926 and the Revenue Act of 1928 extended that preferential treatment to a broad range of pension plans. As broad as the tax benefit became in the 1920s, it initially had little influence on the development of pension plans. Pension coverage spread quickly during the 1940s and 1950s, however, encouraged in part by the high marginal federal tax rates enacted to finance World War II, wage controls during and after the war that exempted pension benefits, and union efforts to negotiate pension benefits through collective bargaining. Pension coverage continued to increase during the 1960s and into the 1970s but stabilized and perhaps decreased slightly during the 1980s.<sup>4</sup>

Employee pension plans are customarily classified into two major categories: defined benefit plans and defined contribution plans. A defined benefit plan promises a retirement benefit amount that is usually determined by salary level and length of service. A defined contribution plan specifies contributions to be made, but the benefits depend on investment performance.

In terms of coverage, defined benefit plans were the predominant type of employee retirement program for many years. In 1975, the percentage of pension plan participants who had a defined contribution plan as their primary plan was only 29 percent, but this increased to 60 percent by 1992.<sup>5</sup> The Pension and Welfare Benefits Administration estimates that, in 1996, 83 percent of all employees with pension coverage were in either a primary or supplemental defined contribution plan.

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<sup>4</sup>Department of Labor, *Pension Coverage Issues for the '90s* (Washington, D.C.: 1994), and *Pension and Health Benefits of American Workers* (Washington, D.C.: May 1994).

<sup>5</sup>*401(k) Pension Plans: Many Take Advantage of Opportunity to Ensure Adequate Retirement Income* (GAO/HEHS-96-176, Aug. 2, 1996).

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## Much of the Labor Force Lacks a Pension Plan

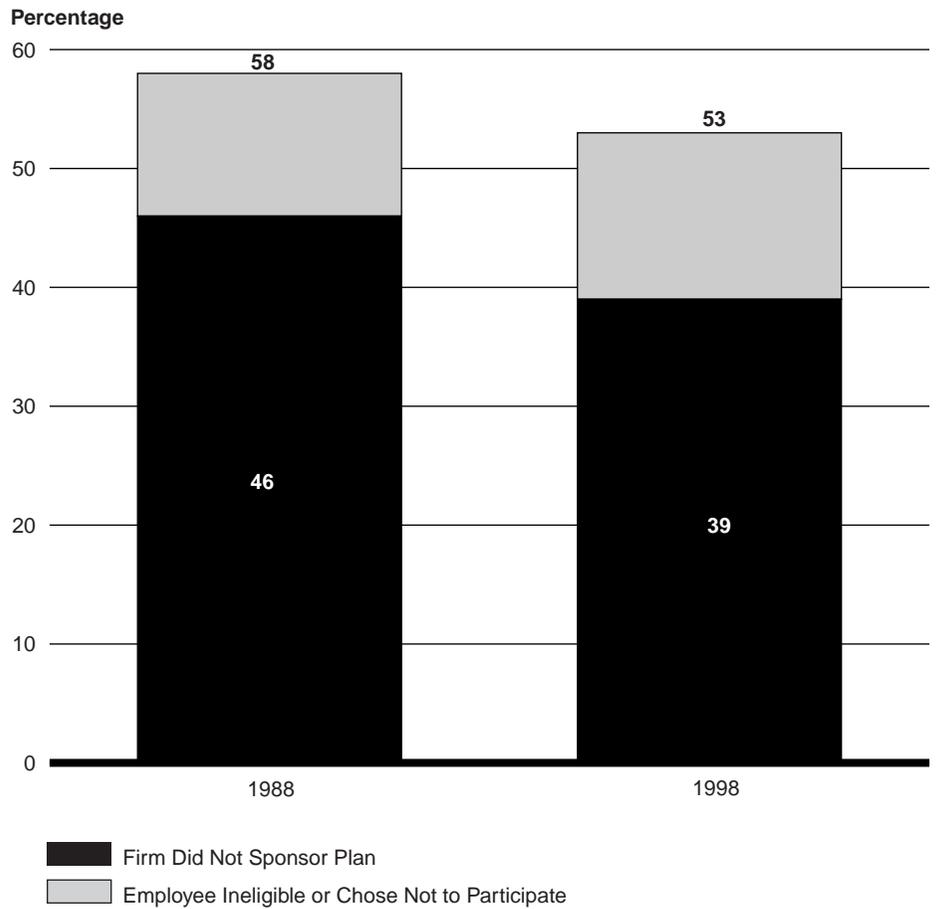
About 53 percent of the employed labor force, 69 million persons, were without a pension plan in 1998, a decrease of 5 percentage points over 10 years. (See fig. 1.) This change was the result of a growing proportion of the labor force being employed by firms with pension plans. Between 1988 and 1998, the proportion of persons who were employed by firms that did not sponsor a plan decreased from 46 percent to 39 percent. However, that decrease was partially offset by a 2 percentage point increase in the number of persons who lacked a plan, either because they were not eligible or because they chose not to participate in their firm's plan.<sup>6</sup> The source of our data on pension coverage over the past 10 years, CPS supplements conducted in March of each year, does not include the information needed to estimate how many of these persons chose not to participate. However, another survey, the CPS Contingent Work Supplement conducted in February 1999, indicates that about 28 percent of the labor force members who did not participate in their firm's plan, or about 4 percent of the employed labor force, chose not to participate in that plan.<sup>7</sup>

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<sup>6</sup>While defined benefit plans generally enroll qualified employees automatically, defined contribution plans, such as 401(k) plans, are generally voluntary and employees must choose to participate in them.

<sup>7</sup>Estimates based on the February and March CPS 1999 supplements are not strictly comparable. The February CPS supplement defined the labor force in terms of current employment, while the March CPS supplement defined it in terms of employment during the year preceding the survey. According to the Pension and Welfare Benefits Administration, for example, the March supplement elicits a higher number of part-year employees than the February supplement.

**Figure 1: The Proportion of the Employed Labor Force That Lacked Pension Coverage, 1988 and 1998**



Note: The figure excludes persons in the labor force who were unemployed (about 1.7 million persons in both years). See appendix II. The figure and appendix exclude self-employed persons (about 14 million in 1998) because the March CPS does not collect information on Keogh plans, a type of pension plan available to the self-employed.

Source: March 1989 and 1999 CPS.

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The decline between 1988 and 1998 in the proportion of the labor force without pension coverage may result from a number of factors. Factors that might affect a firm's decision to sponsor a plan include the strength of the general economy and the relative priority that current and prospective employees place on pension coverage compared with wages and other forms of compensation. Firms might have been more likely to sponsor a plan in 1998 than in 1988, for example, because the economic expansion under way since 1991 had taken unemployment rates close to historical lows and a pension plan can serve as a management tool to attract and retain needed employees. Factors that might have increased employee interest in pension benefits include concerns about Social Security's financial status and the increased proximity of the members of the baby-boom generation to their retirement age. In January 2000, for example, analysts at the Federal Reserve reported that their surveys indicated that retirement-related reasons for saving have consistently increased in importance since 1989.<sup>8</sup> Among the possible reasons given for the increased focus on retirement savings were the ongoing discussions concerning the future of Social Security and the aging of the baby-boom generation.

Despite the increase in coverage from sponsoring firms, about 14 percent of the employed labor force, 18.3 million persons, were not included in their firm's pension plan, either because they did not meet the plan's qualification standards or because they chose not to participate in it. Federal regulations and other laws permit firms to maintain tax-qualified plans that exclude certain groups of employees. For example, a firm may exclude employees with less than 1 year of job tenure from participating in its tax-qualified pension plan.<sup>9</sup>

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<sup>8</sup>Arthur B. Kennickell, Martha Starr-McCluer, and Brian J. Surette, "Recent Changes in U.S. Family Finances: Results from the 1998 Survey of Consumer Finances," *Federal Reserve Bulletin* (Washington, D.C.: Jan. 2000).

<sup>9</sup>The Internal Revenue Code and associated regulations establish rules that pension plans must meet to qualify for favorable tax treatment, including minimum length-of-service and age conditions for plan participation. Generally, plans must consider employees eligible if they have 1 year of service and are at least 21. A year of service is defined as a 12-month period in which the employee has at least 1,000 hours of service.

Our findings on the proportion of the labor force that lacks coverage are generally consistent with those of other survey data sets. For example, another BLS survey, a survey of public and private-sector establishments to determine the incidence and characteristics of employee benefit plans, also indicates that tens of millions of employees are not earning a pension benefit at any given time. The BLS establishment surveys do indicate that the proportion of employees who lack pension coverage may be smaller than is indicated by CPS surveys. On the basis of establishment surveys conducted between 1994 and 1997, BLS estimates that 42 percent of full-time and part-time employees lack pension plans.<sup>10</sup> BLS economists who analyzed the two surveys stated that it is difficult to explain why CPS coverage estimates tend to differ from those derived from establishment surveys. The economists indicated that coverage estimates based on establishment surveys may be more accurate because the CPS is a household survey and some respondents may lack knowledge about their own benefits coverage or the benefits coverage of the other household members for whom they responded. The BLS economists also stated, however, that establishment surveys do not include the detailed demographic and other information on employees who lack pension coverage found in the CPS, limiting the analysis of the characteristics of this population.

## The Characteristics of Persons in the Labor Force Who Lack Pension Coverage

About 85 percent of the persons in the labor force who worked and lacked pension coverage had one or more of four characteristics: They had relatively low income, did not work full time for the entire year, worked for a relatively small firm, or were relatively young. In turn, each of these factors is associated with the trade-off that current and prospective employees might be willing or able to make between pension benefits and other forms of compensation, such as wages and health benefits and the costs and benefits to firms of sponsoring a pension plan for their employees. For the most part, employees exhibited similar

<sup>10</sup>For a variety of reasons, pension coverage rates calculated on the basis of establishment surveys and the CPS are not directly comparable. For example, surveys of employer establishments exclude some employee groups that are included in CPS surveys. However, BLS economists found that after they adjusted for these differences, CPS estimates of participation in pension plans are considerably lower than estimates derived from establishment surveys. Diane E. Herz, Joseph R. Meisenheimer II, and Harriet G. Weinstein, "Health and Retirement Benefits: Data from Two BLS Surveys," *Monthly Labor Review* (Mar. 2000).

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characteristics, whether they were not covered because their firms did not sponsor a plan or they chose not to participate in their firm's plan.

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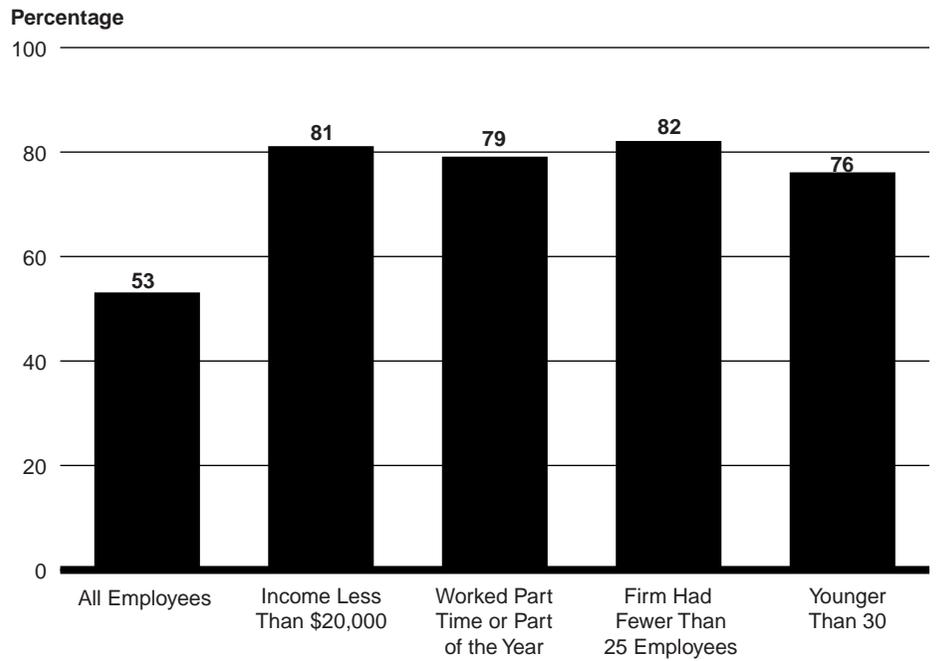
**Low-Income, Part-Time, Small-Business, and Young Employees Are More Likely to Lack Coverage**

Employees with certain demographic or economic characteristics were more likely to lack pensions. Figure 2 shows that employees with the following characteristics were disproportionately more likely to lack pension coverage: employees with incomes of less than \$20,000 (81 percent), employees who worked part time or part of the year (79 percent), employees at firms with fewer than 25 employees (82 percent), and employees younger than 30 (76 percent).<sup>11</sup> Many employees without pension plans had two or more of these characteristics. Together, for example, lower-income and small-firm employees accounted for 74 percent of persons who had no pension plan. Additionally, 82 percent of employees with incomes of less than \$20,000 were part-time or part-year employees or younger than 30 or both. Research has provided a number of possible reasons for the association of these characteristics with the lack of pension coverage.

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<sup>11</sup>We identified major characteristics associated with the lack of pension coverage using a model described in appendix III.

**Figure 2: The Proportion of Employees With Selected Characteristics Who Did Not Have a Pension Plan, 1998**



Note: Reported income is individual income. Studies indicate that income may be underreported in the CPS. See appendix II for the estimated number of employees with each characteristic who lack pension coverage.

Source: March 1999 CPS.

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**Employees With Incomes of Less Than \$20,000**

While 34 percent of employees with incomes of \$20,000 or more lacked pension coverage, 81 percent with lower incomes lacked coverage. Our model associated a 22 percentage point increase in the likelihood of being pensionless for employees with incomes of less than \$20,000 compared with employees with incomes of more than \$60,000. Income influences pension coverage in a number of ways. First, lower-income employees have constraints on the amount of money they can save because of their current consumption needs. If a person's income barely covers a subsistence level of consumption, regardless of age, he or she might not be able to afford to save for retirement and might place a higher value on wages than on pension benefits. As indicated by data on family net worth, lower-income families (and hence workers) accumulate less savings. For example, in 1998, families with incomes of \$10,000 to \$25,000 had a median net worth of \$24,800, whereas families with incomes greater than \$100,000 had a median net worth of \$510,800.<sup>12</sup>

Persons with lower incomes also benefit less from the preferential treatment afforded to pension benefits with respect to income taxes than do persons with higher incomes. Lower-income employees typically have lower marginal tax rates and therefore gain less from deferring taxes on pension plan contributions and earnings than higher-income employees.<sup>13</sup> Higher-income persons also may have lower marginal tax rates during retirement, when taxes would be due on pension plan distributions, than during their working years. Lower-income individuals, in contrast, are less likely to receive this benefit because their income is more likely to be taxed at the lowest rate while they are working and in retirement. This could further reduce the interest that lower-income workers have in pension plan coverage.

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<sup>12</sup>Arthur B. Kennickell, Martha Starr-Mcluer, and Brian J. Surette, "Recent Changes in U.S. Family Finances: Results from the 1998 Survey of Consumer Finances," *Federal Reserve Bulletin* (Jan. 2000).

<sup>13</sup>In 1999, the tax code had five marginal tax rates. The lowest rate was 15 percent for taxable income below \$25,750 (\$43,050 for married couples filing jointly), and the highest rate was 39.6 percent for taxable income higher than \$283,150 for single persons and married couples.

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Beyond the obstacles to saving that lower-income persons face generally, some analysts contend that government programs also might affect the association of income and pension coverage to the extent that Social Security, Supplemental Security Income (SSI), and other programs may curtail the need for savings among lower-income persons.<sup>14</sup> These analysts argue that Social Security replaces a higher percentage of the lower-income person's preretirement earnings. This means that lower-income persons can rely on Social Security benefits to a greater extent to maintain their preretirement standard of living than can higher-income persons. Additionally, SSI and other needs-based programs have asset-based means tests to qualify for benefits. They conclude that needs-based requirements could discourage some lower-income workers from saving for retirement because the wealth accumulation would reduce their chances of qualifying for the programs.

#### Part-Time and Part-Year Employees

While 40 percent of persons who were employed full time and year-round lacked pension coverage, 79 percent of part-time and part-year employees lacked coverage. Our model indicated that the likelihood of lacking coverage is 20 percentage points higher for part-time workers than for full-time workers. Persons working part time or part of the year are less likely to have pension coverage than full-time or year-round employees, partly because such employees may be less skilled or in more unstable jobs. In contrast, increased full-time employment may spur pension sponsorship because of firms' desire to reduce the turnover of skilled employees. Pension coverage appears to reduce labor turnover, although this effect may be stronger at larger firms than smaller firms.<sup>15</sup> The reduction in turnover reduces the firms' labor costs by lowering training costs, and it enhances productivity by retaining skilled employees. Additionally, qualification standards for pension participation permit firms that sponsor a plan to retain favorable tax treatment, even if they exclude part-time and seasonal employees from participation. Such exclusions might be significant for the 4.6 million employees (3.5 percent of the labor force) who were involuntarily employed part time in 1998; that is, they said they would prefer to work full time but could not find full-time work.

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<sup>14</sup>R. Glenn Hubbard, Jonathan Skinner, and Stephen P. Zeldes, "Precautionary Saving and Social Insurance," *Journal of Political Economy*, Vol. 103, No. 2 (1995), pp. 360-99.

<sup>15</sup>William E. Even and David A. Macpherson, "Employer Size and Labor Turnover: The Role of Pensions," *Industrial and Labor Relations Review*, Vol. 49, No. 4 (July 1996), pp. 707-28.

## Employees of Firms With Fewer Than 25 Employees

While 41 percent of persons employed by firms with 100 or more employees lacked pension coverage, 82 percent of employees in firms with fewer than 25 employees lacked coverage. Our model associated a 14 percentage point increase in the likelihood of lacking coverage for workers at firms with fewer than 25 employees compared with workers at firms with 250 or more employees. Several factors lead smaller firms to have lower rates of pension coverage than larger firms. In a survey of small employers, instability of revenues, employee preferences, and administrative burdens and costs were frequently cited as reasons why small firms did not offer pension plans.<sup>16</sup> Revenue uncertainty prevents many small employers from sponsoring pension plans. About 19 percent of survey respondents said that revenues were too uncertain for the firm to commit to a pension plan. Additionally, the relationship between employee preferences and small-firm pension coverage is exhibited by the type of workers a small firm employs. Smaller firms that offer pension coverage tend to have employees with characteristics that are associated with an increased interest in pension coverage—that is, employees who have higher incomes, have more education, and stay with the firm longer. Administrative burdens and costs also can hinder plan sponsorship among small firms more than large firms because of economies of scale. Administrative costs can be spread out over more employees in a larger firm than in a smaller firm.

## Employees Younger Than 30

While 42 percent of employees aged 30 to 59 lacked pension coverage, 76 percent of employees younger than 30 lacked coverage. At early stages of their careers, some employees may prefer to not have pension coverage. Younger employees generally choose to spend their incomes on immediate needs such as paying child rearing expenses, paying college tuition, or financing a mortgage rather than saving for retirement.<sup>17</sup> Also, younger

<sup>16</sup>Paul Yakoboski, Pamela Ostuw, and Bill Pierron, *The 1999 Small Employer Retirement Survey: Building a Better Mousetrap Is Not Enough*, Employee Benefit Research Institute Issue Brief 212 (Washington, D.C.: Aug. 1999).

<sup>17</sup>The theoretical basis for such preferences is found in a life-cycle savings and consumption model. According to this model, expenditures typically exceed earned income during the early part of a person's working years because of more immediate consumption needs. This tends to discourage saving for retirement. Later in life, consumption needs are more likely to be less than earned income, and households can pay off past debts and save for retirement. At retirement, income decreases, consumption needs again exceed earned income, and households use their savings. For a full description of the life-cycle savings and consumption model, see Olivia S. Mitchell and James F. Moore, *Retirement Wealth Accumulation and Decumulation: New Developments and Outstanding Opportunities* (Philadelphia: The Pension Research Council, Apr. 1997).

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employees may simply not feel the need to plan for retirement at the early stages of their careers. As retirement nears, however, employees become more concerned about planning for it and may increasingly select jobs with pension coverage. Finally, employers are allowed to exclude employees from participating in a plan during their first year of employment. This would affect younger workers more than older workers.

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### Other Characteristics of Employees Not in a Pension Plan

Our analysis also found several other characteristics that are associated with a lack of pension coverage. Education is correlated with income and the type of job a person acquires. Having a relatively high educational level makes a person more likely to work for a firm that offers coverage, and vice versa.<sup>18</sup> Job tenure also influences pension coverage; employees in high-turnover industries may have less desire for coverage since they may be unable to meet vesting requirements. In addition, employees in high-turnover industries may prefer higher wages to pension benefits because their job situation is more tenuous. Some industries and occupations lack pension coverage to a greater extent than others. According to our analysis, for example, in 1998, 58 percent of private-sector employees lacked pension coverage, compared with 27 percent of public-sector employees. Public-sector employees may have higher coverage rates than private-sector employees because, among other reasons, many public-sector employees have traditionally been excluded from Social Security coverage and more public-sector employees are unionized.<sup>19</sup> The collective action of union members can push employers to offer pensions if the members of the union want the coverage more than individuals in a nonunion setting.<sup>20</sup>

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<sup>18</sup>William E. Even and David A. Macpherson, "The Changing Distribution of Pension Coverage," *Industrial Relations*, Vol. 39, No. 2 (Apr. 2000), pp. 199-227.

<sup>19</sup>Olivia S. Mitchell and Anna M. Rappaport, "Innovations and Trends in Pension Plan Coverage, Type, and Design," *The Future of Pensions in the United States* (Philadelphia: The Pension Research Council, 1993).

<sup>20</sup>Richard B. Freeman and James L. Medoff, *What Do Unions Do?* (New York: Basic Books, 1984).

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Race and ethnicity are also associated with a lack of pension coverage, although this relationship is not well understood. According to our analysis, blacks and non-Hispanic whites appear equally likely to lack pension coverage, whereas Hispanics and Asians are more likely than non-Hispanic whites to lack pension coverage. There are a limited number of studies to explain these gaps in coverage, and more research is needed.<sup>21</sup> In addition, our analysis found associations between pension coverage and industry of employment, occupation, marital status, and the spouse's pension coverage status. However, as with race and ethnicity, more research is needed to explain these differences.

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### The Characteristics of Employees Who Choose Not to Participate in a Plan

About 4 percent of employees were offered coverage but chose not to participate in a plan. We analyzed employees who were offered defined contribution plan coverage and had no supplemental defined benefit coverage to find the characteristics that were associated with their choosing not to participate.<sup>22</sup> Our analysis showed that employees who were more likely to choose not to participate in defined contribution plans, such as 401(k) plans, have some of the same characteristics as persons in the workforce who lacked pension coverage. For example, employees who chose not to participate in their firm's pension plans were more likely to have relatively low income, be relatively young, and have less than a year of job tenure.<sup>23</sup>

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<sup>21</sup>William E. Even and David A. Macpherson, "Racial and Ethnic Differences in Pension Coverage and Benefit Levels," working paper. Hypotheses for the differences in coverage rates among racial and ethnic groups include differences in life expectancy and family structure.

<sup>22</sup>Annual March and February versions of the CPS do not provide comprehensive information on employees who have the choice to be in a plan but choose not to participate in it. For example, the February 1999 CPS lacks data on firm size. The most current data source with such information is the April 1993 CPS Survey of Employee Benefits.

<sup>23</sup>See appendix III for the complete results of our analysis.

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Our analysis showed that unlike the persons with characteristics described above, employees of larger firms (firms with 100 or more employees) compared with employees of small firms were 11 percent more likely to choose not to participate in their firms' defined contribution plans. A study by Fidelity Investments of more than 5,400 defined contribution pension plans covering 5.2 million participants and using 1998 data also found that larger defined contribution plans have higher nonparticipation rates than smaller plans.<sup>24</sup> The study concluded that the work environment in small companies might allow more opportunity for employees to interact with and be motivated by management, which could lead to greater participation in a firm's pension plan. Also, larger companies are more likely to have other retirement programs, such as defined benefit plans, that automatically cover eligible employees. Employees who are automatically enrolled in a defined benefit plan might be less likely to choose to participate in a supplementary 401(k) plan.

Our analysis also showed that employees were 12 percent more likely to choose not to participate in their firm's defined contribution plan when the firm did not provide matching contributions to the plan. The Fidelity Investments study had similar results. It reported that a company match has a very positive effect on participation rates, regardless of a plan's size. In large plans, for example, a 1.5 percent effective match increases participation by nearly 19 percentage points.

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<sup>24</sup>Fidelity Investments, *Building Futures: How American Companies Are Helping Their Employees Retire*. (n.p.: n.d.).

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## Many Retired Persons Lack Pension Income

While it is not possible to predict how many persons currently in the labor force will ultimately earn a pension benefit, our analysis indicates that in the past, many workers failed to earn such a benefit.<sup>25</sup> In 1998, for example, 48 percent of retired persons (17.6 million of 36.6 million) reported that they had no pension income of their own or from a spouse.<sup>26</sup>

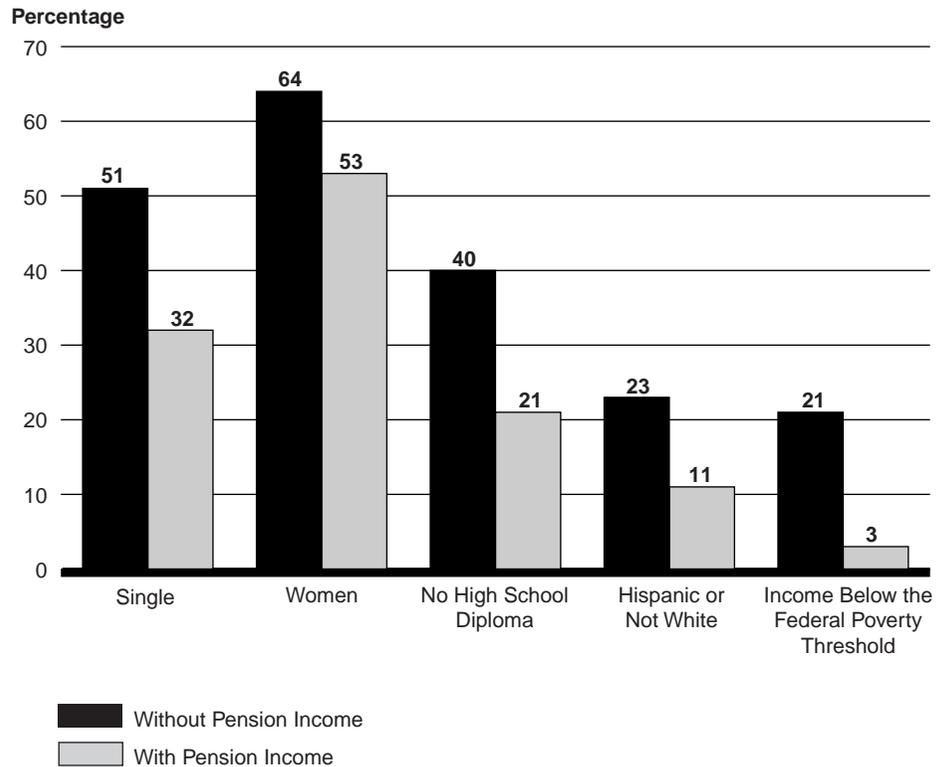
Some of the characteristics we identified as associated with employees who lacked pension coverage also applied to retired persons who lacked pension income: They were more likely to lack high school diplomas, be Hispanic or nonwhite, and have incomes below the federal poverty threshold. (See fig. 3.) For example, 21 percent of retired persons without pension income had incomes below the federal poverty threshold, compared with 3 percent with pension income. In addition, we found that women and single retired persons were more likely to lack pension income. For example, 51 percent of retired persons without pension income were single compared with 32 percent with pension income.

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<sup>25</sup>Persons who are retired now had work lives that spanned the past three or four decades, which included the passage of the Employee Retirement Income Security Act of 1974, the rise of 401(k) plans, and other major pension developments. Thus, we cannot infer from a profile of current retirees what the experience will be for current workers who are still many years from retirement.

<sup>26</sup>Using March CPS data, we categorized as “retired” persons aged 65 or older not working full time and persons younger than 65 who gave “retired” as the reason for not working during all or part of the year. We defined pension income as including regular payments from annuities, individual retirement accounts, Keogh or 401(k) accounts, veterans’ pensions, or survivor benefits. Annuities are insurance products that provide a stream of payments for a preestablished period of time in return for a premium payment.

**Figure 3: Percentage of Retired Persons With and Without Pension Income Who Had Selected Characteristics, 1998**

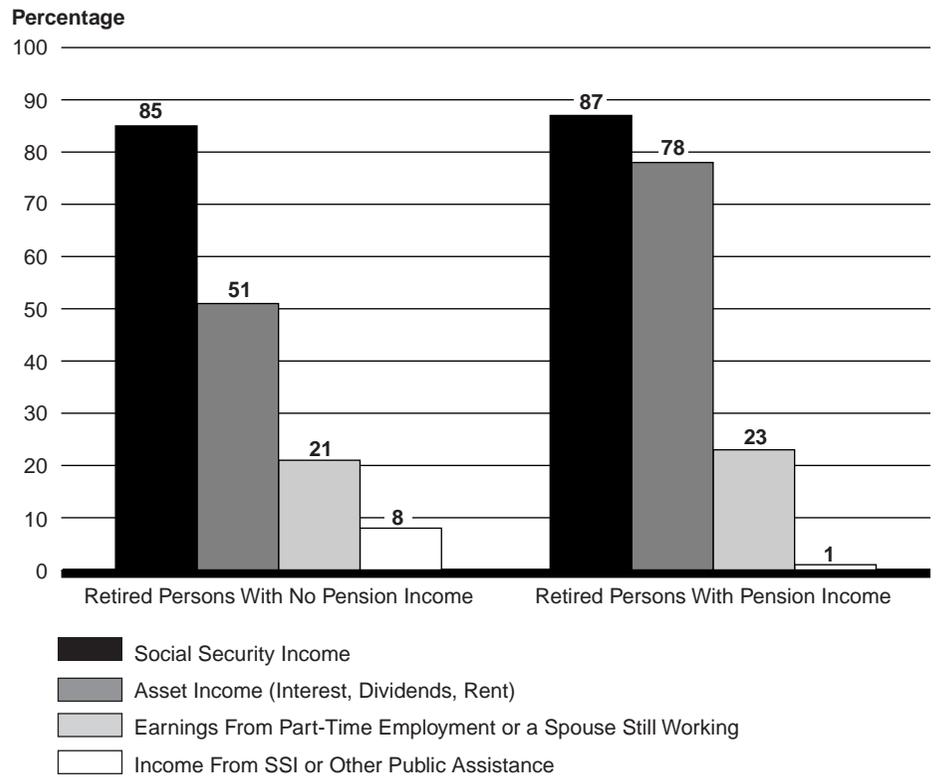


Note: The number of persons with pension income = 19 million. The number of persons without pension income = 17.6 million. See appendix II for the estimated number of retirees with each characteristic who lacked pension income.

Source: March 1999 CPS.

Retired persons without pension income were also less likely than retired persons with pension income to have income from other sources, except for SSI and other public assistance programs. (See fig. 4.) For example, persons without pension income were less likely to have income from assets (51 percent) than those with pension income (78 percent). However, those without pension income were more likely to rely on public assistance programs than those with pension income.

**Figure 4: Sources of Income for Retired Persons With and Without Pension Income, 1998**



Source: March 1999 CPS.

Although most of the 17.6 million retired persons who lacked pension income did not have incomes below the federal poverty threshold, about 21 percent of them (3.6 million) had incomes below the poverty threshold. The characteristics associated with the lack of pension income shown in figure 3 were also highly associated with retired persons who had incomes below the poverty threshold and who lacked pension income. For example, 71 percent of retired persons who had incomes below the poverty threshold and lacked pension income were single. Similarly, 69 percent were women, and 55 percent lacked a high school diploma. (See table 1.)

**Table 1: Characteristics of Retired Persons Who Had Incomes Below the Poverty Threshold and Lacked Pension Income, 1998**

Characteristic	Percent (N = 3.6 million)
Single	71%
Women	69
No high school diploma	55
Hispanic or not white	37

Source: March 1999 CPS.

## Concluding Observations

In recent decades, federal efforts to expand private pension coverage have concentrated on providing tax incentives for employers to sponsor and employees to participate in pension plans. These efforts have been relatively successful in fostering pension coverage among moderate-income and high-income workers. Almost two-thirds of all workers with incomes greater than \$20,000 a year had pension coverage. Despite these longstanding tax benefits and a sustained economic expansion featuring historically low unemployment levels, more than half of the labor force in 1998—71 million workers—continued to have no pension coverage. Further, this lack of pension coverage is concentrated in certain segments of the labor force. More than 80 percent of lower-income workers—those earning less than \$20,000 per year—continue to lack pension coverage.

We note that our analysis indicates only the extent to which labor force participants do not have pension coverage at a point in time. Some of the “pensionless” workers we identified will likely obtain a pension plan later in their work careers. However, we also found that a sizable proportion of current retired persons (48 percent) do not have pension income and that they are more likely to have incomes below the federal poverty threshold than those who receive pension income. This suggests that incentives or interventions that rely on tax preferences to encourage voluntary pension sponsorship and participation have not enabled certain segments of the labor force, such as lower-income and part-time employees, to receive pension benefits at retirement.

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## Agency Comments

We provided Labor the opportunity to comment on the report. Labor provided us with technical comments, which we incorporated where appropriate.

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We are sending copies of this report to the Honorable Alexis M. Herman, Secretary of Labor, and the appropriate congressional committees. Copies will also be made available to others on request. Please call me at (202) 512-5491 or Charles A. Jeszeck at (202) 512-7036 if you or your staff have any questions. Other major contributors to the report include Andrew Davenport, Jeffrey S. Petersen, Donald J. Porteous, and John M. Schaefer.



Barbara D. Bovbjerg  
Associate Director, Education, Workforce, and  
Income Security Issues

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# Scope and Methodology

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To obtain information on the characteristics of persons in the labor force who do not have pension plans and the extent to which they are not covered, we interviewed pension experts and reviewed relevant studies. Using information from interviews and other studies, we identified the demographic and other characteristics associated with pension coverage and analyzed survey data. We used a logistic regression model to assess the influence those characteristics appeared to have on pension coverage. We also used survey data to provide current data for the relevant characteristics. We used information from the studies that we reviewed and the pension experts whom we interviewed to provide a context for the relevant characteristics. Similarly, we reviewed studies and analyzed survey data to examine the extent to which retired persons do not receive pension income and their characteristics.

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## Survey Data

We used survey data from the Current Population Survey (CPS) because of its large sample size, its inclusion of detailed information on the economic and demographic characteristics of labor force participants, and the timeliness of its data and because its collection frequency allows the opportunity to show trends over time. The annual March CPS supplement is the official source of income and poverty estimates for the United States and has been a mainstay of income measurement in the United States since it began in 1947. The March supplement includes household economic, demographic, and employment data for the previous year. It contains labor force data on 101,000 persons aged 15 and older. The large sample size makes it possible to estimate rates of pension coverage among categories of workers that are based on various demographic characteristics with small sampling errors. The sampling errors for the estimated percentages used in this report are less than plus or minus 1 percentage point at the 95 percent confidence level. We used annual March CPS supplements from 1989 and 1999 to provide trend data concerning pension coverage. These supplements provide information concerning pension plan sponsorship and participation for jobs held in the year preceding the survey, although they do not contain information as to why persons were not in their firm's plan—that is, whether they were ineligible or chose to not participate.

For pension-related information not available in the March supplement, we used other CPS supplements. We used the February 1999 CPS Contingent Work Supplement for information about whether employees were ineligible or chose not to participate in their current firm's pension plan. The most recent CPS supplement specifically designed to provide comprehensive information concerning pension coverage and participation was the April

1993 Survey of Employee Benefits, which we used for our logistic regression models. Comprehensive pension coverage and participation information was collected in the 1996 Survey of Income and Program Participation; however, that information has not yet been processed and released for public use.

Although widely used and a rich source of detailed data, CPS and other surveys that are based on self-reported data are subject to several sources of nonsampling error, including inability to get information about all sample cases; difficulties of definition; differences in the interpretation of questions; respondents' inability or unwillingness to provide correct information; and errors made in collecting, recording, coding, and processing data.

These nonsampling errors can influence the accuracy of information presented in the report, although the magnitude of their effect is not known. For March 1999, about 8 percent of persons in the sample did not respond to the basic survey, which the Bureau of the Census adjusts for by using weighting techniques. Additionally, some respondents do not provide answers to all the questions in the survey, and the Bureau imputes responses based on data from respondents with similar demographic characteristics. For example, about 14 percent of the data on pension inclusion and about 26 percent of the data on earnings are imputed. These adjustments may not fully correct for missing or incorrectly reported data. For example, much previous research has shown that all sources of income have historically been underreported in the CPS.<sup>1</sup> Furthermore, when responses to pension questions were provided, more than 20 percent of the respondents were persons in the household other than the employee or the employee's spouse, and Bureau of Labor Statistics (BLS) researchers question the ability of these persons to consistently provide accurate information concerning the employee's pension coverage.

In addition, comparing data between supplements is difficult because of differences in the wording of questions, the time periods the questions cover, and the persons of whom the questions are asked. For example, the March supplement asks pension questions concerning employment in the past year, while the February supplement asks questions concerning current employment.

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<sup>1</sup>Patrick J. Purcell, *Pension Issues: Lump-Sum Distributions and Retirement Income Security* (Washington, D.C.: Congressional Research Service, Mar. 14, 2000).

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## **Logistic Regression Models**

We developed two models to examine the strength of the association between various economic and work-related characteristics and the lack of pension coverage or participation. In the first model, the pension coverage model, we examined persons aged 21 to 54 who were not self-employed to assess the factors that contribute to their lack of pension coverage. In the second model, the pension choice model, we examined persons aged 21 to 54 who were not self-employed who were offered defined contribution pension coverage and assessed the factors that influence whether they choose to participate in a plan. We used the April 1993 CPS Survey of Employee Benefits to test the characteristics that appear to influence pension coverage and choice. The models and their results are described in appendix III.

# Analysis of CPS Pension Coverage Rates and Lack-of-Coverage Factors

Table 2 shows that excluding self-employed persons, almost 133 million persons reported that they worked or looked for work at some time during 1998.<sup>1</sup> About 69 million persons in the labor force were employed but lacked pension coverage because their employers did not sponsor a plan or they were not eligible for or chose not to participate in their employer's plan. An additional 1.7 million persons lacked pension coverage because they were unemployed throughout the year.

**Table 2: Pension Status of the Wage and Salary Labor Force, 1988 and 1998**

Status	1988	1998
Employed labor force		
In a plan	48.6	61.5
Not in a plan		
Firm did not sponsor a plan	54.3	51.1
Firm sponsored a plan, but person was not eligible or chose not to participate in it	14.1	18.3
<b>Total employed and not in a plan</b>	<b>68.4</b>	<b>69.4</b>
<b>Total employed labor force</b>	<b>117.0</b>	<b>130.9</b>
Unemployed—did not work but looked for work some time during the year	1.7	1.7
<b>Total labor force</b>	<b>118.7</b>	<b>132.6</b>

Note: Numbers are millions of persons.

Source: March 1989 and 1999 CPS.

Table 3 shows that a majority of the 69 million employees who lacked pension coverage had specific characteristics. For example, employees with incomes of less than \$20,000 made up 40 percent of the employed labor force but 61 percent of those who lacked pension coverage. Similarly, persons who worked part time or for part of a year made up 34 percent of the employed labor force but 51 percent of those who lacked coverage.

<sup>1</sup>This figure excludes 14 million self-employed persons because the March CPS does not include information on Keogh plans, a type of pension plan available to the self-employed.

**Appendix II**  
**Analysis of CPS Pension Coverage Rates and**  
**Lack-of-Coverage Factors**

**Table 3: Major Characteristics of Employees Not in a Pension Plan, 1998**

Characteristic	Employed labor force <sup>a</sup>		Not in a pension plan	
	Number	Percent	Number	Percent
<b>Total individual income</b>				
Less than \$20,000	52.3	40%	42.5	61%
\$20,000 or more	78.5	60	26.9	39
<b>Total</b>	<b>130.9</b>	<b>100%</b>	<b>69.4</b>	<b>100%</b>
<b>Work schedule</b>				
Employed part time or part of the year	44.9	34%	35.4	51%
Employed full time and all year	85.9	66	34.1	49
<b>Total</b>	<b>130.9</b>	<b>100%</b>	<b>69.4</b>	<b>100%</b>
<b>Firm size</b>				
Fewer than 25 employees	29.2	22%	23.9	34%
25–99 employees	17.8	14	11.2	16
100 or more employees	83.9	64	34.3	49
<b>Total</b>	<b>130.9</b>	<b>100%</b>	<b>69.4</b>	<b>100%</b>
<b>Age in years</b>				
16–29	38.7	30%	29.5	42%
30–59	83.7	64	35.2	51
60 or older	8.5	6	4.8	7
<b>Total</b>	<b>130.9</b>	<b>100%</b>	<b>69.4</b>	<b>100%</b>

Note: Number of persons = millions. Numbers may not add because of rounding.

<sup>a</sup>Excludes 1.7 million persons in the labor force who were unemployed.

Source: March 1999 CPS.

At retirement, persons who lack pension income were more likely to have incomes below the federal poverty threshold or to be single, women, Hispanic or not white or to have less education compared with those with pension income. (See table 4.) For example, 21 percent of retired persons without pension income had incomes below the federal poverty threshold compared with 3 percent with pension income. Similarly, 23 percent without pension income were Hispanic or not white compared with 11 percent with pension income.

**Appendix II**  
**Analysis of CPS Pension Coverage Rates and**  
**Lack-of-Coverage Factors**

**Table 4: Characteristics of Retired Persons With No Pension Income of Their Own or From a Spouse, 1998**

Characteristic	Pension income			No pension income	
	Total number	Number	Percent	Number	Percent
<b>Total income<sup>a</sup></b>					
Below poverty threshold	4.2	0.5	3%	3.6	21%
Above poverty threshold	32.4	18.4	97	13.9	79
<b>Total</b>	<b>36.6</b>	<b>19.0</b>	<b>100%</b>	<b>17.6</b>	<b>100%</b>
<b>Marital status</b>					
Single	15.1	6.0	32%	9.0	51%
Married	21.5	12.9	68	8.5	49
<b>Total</b>	<b>36.6</b>	<b>19.0</b>	<b>100%</b>	<b>17.6</b>	<b>100%</b>
<b>Gender</b>					
Male	15.2	8.9	47%	6.3	36%
Female	21.3	10.0	53	11.3	64
<b>Total</b>	<b>36.6</b>	<b>19.0</b>	<b>100%</b>	<b>17.6</b>	<b>100%</b>
<b>Race or ethnicity</b>					
White	30.5	16.9	89%	13.6	77%
Hispanic or not white	6.1	2.1	11	4.0	23
<b>Total</b>	<b>36.6</b>	<b>19.0</b>	<b>100%</b>	<b>17.6</b>	<b>100%</b>
<b>Education</b>					
No high school diploma	11.1	4.0	21%	7.1	40%
High school diploma or higher	25.5	15.0	79	10.5	60
<b>Total</b>	<b>36.6</b>	<b>19.0</b>	<b>100%</b>	<b>17.6</b>	<b>100%</b>

Note: Number of persons = millions. Numbers may not add because of rounding.

<sup>a</sup>Total income includes income of the spouse and other family members who lived with the retired person.

Source: March 1999 CPS.

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# Summary of GAO's Regression Models

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The purpose of the logistic regression models is to find associations between pension coverage and the characteristics of employees and the firms for which they work. The results of the regressions should not be interpreted as direct causation between the lack of pension coverage and the variables in a model. For the pension coverage model, we defined the outcome variable as whether or not persons in the labor force were covered by an employee pension plan. Closely following an analytical model presented by pension experts, we categorized the predictor variables as employee- or job-specific.<sup>1</sup> Employee-specific variables assess the employees' demand for a pension, attempting to capture their desire to have pension coverage or to select themselves into jobs that have pension coverage. For example, as a person's total income rises, he or she may be more likely to demand pension coverage because of the tax advantages that pensions offer relative to wages and other forms of compensation. Job-specific variables attempt to assess the firm's willingness to supply a pension. For example, small firms lack the economies of scale (as the number of employees increases, cost per employee decreases) to start and administer pension plans. Therefore, small firms may be less likely to provide coverage.

Table 5 presents the results of our pension coverage model. The model indicates that the statistically significant employee characteristics associated with the lack of coverage were income, part-time status, age, tenure, race, education, firm size, union status, the spouse's pension coverage, the spouse's employment status, industry of employment, and type of occupation.<sup>2</sup> The amount of the difference in pension coverage that is attributable to the difference between the "reference" variable and the other variables in the category is shown in the marginal effect column. Marginal effect shows the likelihood of not having pension coverage if an individual moved from the reference variable to another variable within the category. For example, the table shows that the marginal effect of being a part-time worker is 20.1 percentage points. Evaluated at the mean characteristic across all workers in the sample, the results suggest that if a full-time employee switched to a part-time job, the likelihood of this employee lacking a pension would increase by 20.1 percentage points, if all

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<sup>1</sup>William E. Even and David A. Macpherson, "The Gender Gap in Pension and Wages," *Review of Economics and Statistics*, Vol. 72, No. 2 (May 1990), pp. 259-62.

<sup>2</sup>Variables were considered statistically significant at the .05 level.

the person's other characteristics that were included in the model held constant.

**Table 5: Characteristics Associated With Persons in the Labor Force Who Lacked Pension Coverage, 1993**

<b>Characteristic</b>	<b>Percentage without coverage</b>	<b>Logit estimate</b>	<b>Standard error</b>	<b>Marginal effect</b>
<b>Income</b>				
Less than \$20,000	49.9%	1.389	0.131	22.2%**
\$20,000 to \$39,999	20.8	0.592	0.123	13.6**
\$40,000 to \$59,999	11.0	0.221	0.131	5.5
More than \$59,999	9.4	Reference <sup>a</sup>		
<b>Work status</b>				
Part-time	55.3	1.040	0.083	20.1**
Full-time	22.8	Reference <sup>a</sup>		
<b>Age in years</b>				
21-29	35.4	0.146	0.072	3.6 *
30-39	26.4	0.019	0.062	0.5
40-54	33.5	Reference <sup>a</sup>		
<b>Tenure</b>				
1 year or less	51.3	0.681	0.086	15.2**
More than 1 year	24.0	Reference <sup>a</sup>		
<b>Race or ethnicity</b>				
Black	23.6	0.148	0.099	3.7
Hispanic	42.1	0.445	0.100	10.6**
Asian	29.6	0.380	0.177	9.2 *
Other	28.5	0.273	0.347	6.7
White	25.0	Reference <sup>a</sup>		
<b>Gender</b>				
Male	24.7	0.063	0.066	1.6
Female	27.9	Reference <sup>a</sup>		
<b>Marital status and spouse's work status and coverage</b>				
Married, spouse works but has no coverage	32.7	0.219	0.076	5.4**
Married, spouse does not work	25.1	0.010	0.083	0.2

**Appendix III**  
**Summary of GAO's Regression Models**

(Continued From Previous Page)

<b>Characteristic</b>	<b>Percentage without coverage</b>	<b>Logit estimate</b>	<b>Standard error</b>	<b>Marginal effect</b>
Married, spouse works and has coverage	20.4	-0.243	0.067	-6.0**
Single	29.7	Reference <sup>a</sup>		
<b>Education</b>				
No high school diploma	52.3	0.826	0.120	17.5**
High school diploma	31.4	0.441	0.086	10.5**
Some college	24.7	0.163	0.084	4.0
College diploma	14.4	Reference <sup>a</sup>		
<b>Firm size</b>				
Fewer than 25 employees	75.8	2.950	0.073	13.9**
25-99 employees	45.2	1.927	0.072	21.4**
100-249 employees	22.5	0.904	0.093	18.5**
250 employees or more	10.3	Reference <sup>a</sup>		
<b>Union status</b>				
Not a union member	31.6	0.995	0.088	19.6**
Union member	7.4	Reference <sup>a</sup>		
<b>Industry</b>				
Agriculture, forestry, and fisheries	69.3	0.796	0.307	17.1**
Mining	21.0	0.808	0.295	17.2**
Construction	46.6	0.711	0.143	15.7**
Manufacturing, nondurable goods	19.7	0.283	0.127	6.9 *
Transportation	22.5	0.811	0.154	17.3**
Communications	12.2	0.586	0.253	13.5 *
Utilities	4.1	-1.173	0.360	-21.2**
Wholesale trade	29.7	0.204	0.147	5.1
Retail trade	47.1	0.914	0.121	18.7**
Finance, insurance, and real estate	17.0	-0.036	0.145	-0.9
Business and repair	46.1	0.963	0.142	19.3**
Personal services, including private household	73.0	1.527	0.199	22.4**
Entertainment	44.3	0.917	0.237	18.7**
Hospital	4.9	-0.705	0.210	-15.6**
Medical, except hospital	38.5	0.093	0.154	2.3
Education	13.3	0.179	0.148	4.4
Social services	45.1	0.821	0.190	17.4**
Other professional	31.3	0.325	0.153	7.9 *

**Appendix III**  
**Summary of GAO's Regression Models**

(Continued From Previous Page)

<b>Characteristic</b>	<b>Percentage without coverage</b>	<b>Logit estimate</b>	<b>Standard error</b>	<b>Marginal effect</b>
Public administration	3.8	-1.027	0.235	-19.9**
Manufacturing, durable goods	13.4	Reference <sup>a</sup>		
<b>Occupation</b>				
Executive, administrative, and managerial	21.8	0.230	0.112	5.7 *
Technician	16.4	-0.224	0.165	-5.5
Sales	36.2	0.191	0.130	4.7
Administrative support	20.6	-0.309	0.118	-7.5**
Private household	95.8	0.916	0.728	18.7
Protective service	11.3	0.482	0.271	11.4
Other service	50.9	0.461	0.132	10.9**
Precision production	28.5	0.057	0.137	1.4
Machine operator	25.2	0.132	0.156	3.3
Transportation	31.5	0.212	0.164	5.2
Handler	37.8	0.337	0.173	8.2
Farming, fishing, and forestry	73.9	0.700	0.328	15.5 *
Professional specialty	14.0	Reference <sup>a</sup>		

<sup>a</sup>Reference = identifies the reference variable.

\*\* = statistical significance at the .01 level.

\* = statistical significance at the .05 level.

Source: GAO analysis of April 1993 CPS.

We also developed our pension choice model by closely following the analytical models pension experts use.<sup>3</sup> This model assesses several factors that could influence an employee's decision to participate in a

<sup>3</sup>Richard P. Hinz and John A. Turner, "Pension Coverage Initiatives: Why Don't Workers Participate?" pp. 17-37, and R. L. Clark and S. J. Schieber, "Factors Affecting Participation Rates and Contribution Levels in 401(k) Plans," pp. 69-97, in Olivia Mitchell and Sylvester J. Schieber (eds.), *Living with Defined-Contribution Pensions* (Philadelphia: The Pension Research Council, 1998).

defined contribution pension plan.<sup>4</sup> For this model, the outcome variable is whether persons in the labor force choose to participate in a plan of this type of plan when the firm offers it. Because the factors influencing participation and coverage are similar, we generally used the same predictor variables in the pension choice model. We added a variable to assess whether the presence of a firm's matching contribution is associated with participation. Employees who had defined-benefit coverage or were offered multiple defined-contribution plans were excluded from the model. These workers were excluded from the model in order to focus our analysis on workers with only the choice to participate in a 401(k) plan, with the 401(k) plan being the only plan offered by the firm.

Table 6 shows the characteristics associated with persons in the labor force who chose not to participate in a plan. Lack of a matching contribution by the firm, lower earnings, and shorter tenure were associated with an increased likelihood of choosing not to participate. Younger persons were less likely to participate compared with persons of middle age. Employees in firms with fewer than 100 employees were more likely to participate than employees in firms with 100 or more employees. Black employees were less likely to participate compared with white employees.

**Table 6: Characteristics Associated With Persons in the Labor Force Who Chose Not to Participate in a Pension Plan of the 401(k) Type, 1993**

Characteristic	Percent without coverage	Logit estimate	Standard error	Marginal impact
<b>Income</b>				
Less than \$20,000	37.3%	1.490	0.312	22.4% **
\$20,000 to \$39,999	16.4	0.604	0.288	13.8 *
\$40,000 to \$59,999	8.3	-0.061	0.310	-1.5
More than \$59,999	7.6	Reference <sup>a</sup>		

<sup>4</sup>We considered individuals as participating in a plan of the 401(k) type if they responded "yes" to the following question: "Some retirement plans allow workers to make tax-deferred contributions to the plan. For example, you might choose to have part of your salary deposited into a retirement savings account, and then you do not pay income taxes on this money until you take it out or retire. These plans are called by different names, including 401(k) plans, pre-tax plans, salary reduction plans, and 403(b) plans. Do you participate in a plan like this?" We classified individuals as covered by a 401(k)-type plan if they said their employer offered such a plan, whether or not they participated in it.

**Appendix III**  
**Summary of GAO's Regression Models**

(Continued From Previous Page)

<b>Characteristic</b>	<b>Percent without coverage</b>	<b>Logit estimate</b>	<b>Standard error</b>	<b>Marginal impact</b>
<b>Employer's matching contribution</b>				
None	19.7	0.523	0.165	12.2**
Some	16.8	Reference <sup>a</sup>		
<b>Work status</b>				
Part-time	27.2	0.061	0.255	1.5
Full-time	16.8	Reference <sup>a</sup>		
<b>Age in years</b>				
21-29	26.4	0.667	0.183	14.9**
30-39	16.9	0.374	0.166	9.0 *
40-54	12.1	Reference <sup>a</sup>		
<b>Tenure</b>				
1 year or less	47.4	1.684	0.203	22.2**
More than 1 year	14.9	Reference <sup>a</sup>		
<b>Race or ethnicity</b>				
Black	29.9	0.603	0.239	13.8 *
Hispanic	26.5	0.334	0.293	8.1
Asian	6.49	-1.076	0.601	-20.4
White	16.37	Reference <sup>a</sup>		
<b>Gender</b>				
Male	14.9	0.177	0.162	4.4
Female	20.5	Reference <sup>a</sup>		
<b>Marital status and spouse's work status and coverage</b>				
Married, spouse works but has no coverage	20.3	0.456	0.191	10.8 *
Married, spouse does not work	21.6	0.297	0.212	7.3
Married, spouse works and has coverage	16.5	-0.359	0.168	-8.7 *
Single	12.7	Reference <sup>a</sup>		
<b>Education</b>				
No high school diploma	23.7	0.110	0.362	2.7
High school diploma	19.0	0.310	0.216	7.6 *
Some college	21.2	0.494	0.192	11.6 *
College diploma	12.0	Reference <sup>a</sup>		
<b>Firm size</b>				
100 or more employees	18.3	0.455	0.203	10.8 *
Fewer than 100 employees	13.2	Reference <sup>a</sup>		

**Appendix III**  
**Summary of GAO's Regression Models**

(Continued From Previous Page)

<b>Characteristic</b>	<b>Percent without coverage</b>	<b>Logit estimate</b>	<b>Standard error</b>	<b>Marginal impact</b>
<b>Union status</b>				
Not a union member	14.5	0.178	0.230	4.4
Union member	17.8	Reference <sup>a</sup>		
<b>Industry</b>				
Construction	14.5	0.316	0.492	7.7
Manufacturing, nondurable goods	12.6	-0.139	0.291	-3.5
Transportation, communications, and utilities	18.6	0.214	0.330	5.3
Wholesale trade	11.7	-0.110	0.347	-2.7
Retail trade	22.0	0.495	0.263	11.7
Finance, insurance, and real estate	20.4	0.521	0.267	12.2
Business and repair	16.9	0.101	0.320	2.5
Hospital	35.0	1.263	0.292	21.7**
Medical, except hospital	19.1	0.051	0.423	1.3
Education	12.1	-0.079	0.390	-2.0
Other professional	11.6	0.078	0.380	2.0
Public administration	19.5	0.383	0.352	9.2
Manufacturing, durable goods	14.5	Reference <sup>a</sup>		
<b>Occupation</b>				
Executive, administrative, and managerial	9.8	-0.635	0.272	-14.4 *
Technician	14.9	-0.637	0.336	-14.4
Sales	13.4	-0.734	0.324	-16.1
Administrative support	25.2	-0.095	0.264	-2.4
Private household and other service	30.2	-0.023	0.384	-0.6
Precision production	16.9	-0.037	0.326	-0.9
Machine operator	19.7	0.018	0.355	0.4
Transportation	18.8	-0.382	0.459	-9.2
Handler	27.1	-0.489	0.436	-11.5
Professional specialty	15.8	Reference <sup>a</sup>		

<sup>a</sup>Reference = reference variable.

\*\* = statistical significance at the .01 level.

\* = statistical significance at the .05 level.

Source: GAO analysis of April 1993 CPS.

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