
Vesting of Private Pension Benefits in 1979 and Change From 1972

by Gayle Thompson Rogers*

This article examines the prevalence of vested private pension benefits in 1979 as reported by full-time private wage and salary workers actively participating in pension plans. It also analyzes the effect of selected demographic, economic, labor-force, and plan characteristics on vested status.

Years of participation in a plan was by far the most important predictor of vested status. Age was positively related to vested status even after accounting for the longer plan participation of older workers. Evidence pertaining to occupation, size of firm, and type of employer plan suggests that multi-employer plans and those covering professional and managerial workers and the employees of the smallest firms have more rapid vesting schedules than plans covering other workers. Sex, race, union representation, and earnings had little meaningful effect on vested status.

This article also examines change in the prevalence of vesting after passage of the Employee Retirement Income Security Act (ERISA) by comparing reported vested rates for 1972 and 1979. The proportion of plan participants reporting vested benefits rose substantially during this period, a finding suggestive of ERISA's substantial impact. The magnitude of the change is examined by years of service with employer, age, sex, earnings, occupation, and industry.

Private pension benefits are an important supplement to benefits received from the old-age, survivors, and disability insurance (OASDI) program, more commonly known as the social security program. Retired persons receiving private pensions in addition to social security benefits have substantially higher retirement incomes, a much lower probability of poverty, and a higher replacement of their preretirement earnings than those who only receive social security.

Median total money income in 1978 for social security beneficiaries (married couples and nonmarried individuals) aged 65 and older was \$9,190 for those receiving additional income from private pensions but only \$4,210 for those whose only retirement pension was from social security.¹ The poverty rates for these two

groups were 2 percent and 32 percent, respectively. Median earnings replacement rates among married men aged 63-69 in 1973-74 were 52 percent for those receiving second pensions as well as social security benefits and 38 percent for those receiving social security benefits only.²

Despite the important contribution that private pension benefits make to retirement income, a minority of older persons receive such income. Among social security beneficiaries aged 65 and older in 1978, 33 percent of the married couples, 24 percent of the nonmarried men, and 13 percent of the nonmarried women received income from private pensions or annuities.³

Many current retirees not receiving private pension benefits had never participated in private pension plans

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¹ Susan Grad, *Income of the Population 55 and Older, 1978* (Staff Paper forthcoming), Office of Research and Statistics, Office of Policy, Social Security Administration, table 35.

² Alan Fox, "Earnings Replacement Rates of Retired Couples: Findings from the Retirement History Study," *Social Security Bulletin*, January 1979, table 8.

³ Susan Grad, *op. cit.*, table 3.

and thus had had no opportunity to earn benefits.⁴ Of those who had participated, some changed to jobs not covered by the same plan or left the labor market before qualifying for benefits. Other participants remained in their plans long enough to qualify for benefits (vested participants) but, upon separation from the plan or retirement, received a lump-sum disbursement in exchange for monthly retirement benefits. Still other vested participants lost benefits because of plan terminations or company bankruptcies.

The number and proportion of private wage and salary workers covered⁵ by private pension plans expanded substantially in the 1950's and more slowly in the 1960's and the first half of the 1970's. The number of private pension beneficiaries and the ratio of beneficiaries to active covered workers also has expanded considerably, particularly since 1960.⁶

Private pension benefits undoubtedly will be more prevalent among future generations of retired persons, both as a result of the normal maturation of the private pension system, and in response to the more liberal vesting requirements and termination insurance mandated by the Employee Retirement Income Security Act (ERISA) of 1974. Barring new legislative initiatives, however, many future retirees will not receive these benefits. Many currently noncovered workers are employed in small, low-wage, nonunionized industries where extensive new plan formation is unlikely.⁷ Of those who are covered, many—particularly highly mobile and intermittent workers—will continue to leave their plans before meeting the vesting requirements or will receive lump-sum benefits upon separation from their plans.

Research Objectives

This article analyzes data relating to the prevalence of vested private pension benefits in 1979 as reported by full-time⁸ wage and salary workers in the employed private labor force who were active participants in pension

⁴ For an analysis of characteristics related to coverage and benefit receipt among retiring workers, see Gayle B. Thompson, "Pension Coverage and Benefits, 1972: Findings From the Retirement History Study," *Social Security Bulletin*, February 1978, pages 3-17.

⁵ Covered workers are defined as those who are actively participating in pension plans, that is, who are actively accruing pension credits. The terms "coverage" and "participation" are used synonymously in this article.

⁶ Martha Remy Yohalem, "Employee Benefit Plans, 1975," *Social Security Bulletin*, November 1977, table 6.

⁷ Daniel J. Beller, "Coverage Patterns of Full-Time Employees Under Private Retirement Plans," *Social Security Bulletin*, July 1981, page 3; Gayle Thompson Rogers, *Pension Coverage and Vesting Among Private Wage and Salary Workers, 1979* (Working Paper No. 16), Office of Research and Statistics, Office of Policy, Social Security Administration, June 1980.

⁸ Full-time workers are defined as those who usually work 35 or more hours per week on their principal job.

plans.⁹ It examines whether and how selected demographic, economic, labor-force, and plan characteristics affect vested status apart from the influence of years of plan participation. The specific characteristics examined are: Years of plan participation, age, annual earnings, sex, race, occupation, size of firm, union representation, and type of employer plan. The article also examines changes in the prevalence of vested benefits between 1972 and 1979, that is, before and after the passage of ERISA.

The term "vesting" refers to the nonforfeitable rights of employees to receive benefits based on employer contributions, that is, rights to benefits even if the employees should cease active participation in their plans at any time before the normal retirement age. They acquire these rights by satisfying the vesting requirements stated in their plans. In general, the vested benefit is based on their accrued pension credits up to the time that they separate from the plan and is payable at normal or early retirement age. If the accrued benefit value is under \$1,750 at the time of an employee's separation from the plan, a defined-benefit plan can cash out this value and provide the employee with a lump-sum distribution. With the employee's consent, benefit values in excess of that amount can also be cashed out. The employee is permitted a tax-free rollover of a lump-sum distribution into an Individual Retirement Account (IRA).

Before ERISA, plans were not legally required to contain vesting provisions. They could deny benefits to participants, even to those with long service under the plan, who withdrew from active participation before attaining retirement age. In 1969, 23 percent of the active participants in plans with 26 or more participants were in plans with no vesting provisions.¹⁰ Thirty-four percent were in plans requiring 5-10 years of service under the plan for vesting, 30 percent in plans requiring 11-15 years, and 11 percent in plans with more stringent requirements. Only 1 percent were in plans requiring less than 5 years.

With the passage of ERISA, tax-qualified plans were required to incorporate a vesting schedule at least as liberal as one of the following:

- (1) Cliff vesting: full (100 percent) vesting after 10 years of participation in the plan, with no vesting before completion of 10 years.
- (2) Graded vesting (5 to 15 years): 25 percent vesting after 5 years of participation, plus 5 percent for each additional year of participation up to 10 years (50 percent vesting after 10 years), plus an additional 10 per-

⁹ The Department of Labor has prepared a companion article examining pension coverage data from the same survey. See Daniel J. Beller, *op. cit.*

¹⁰ Harry E. Davis and Arnold Strasser, "Private Pension Plans, 1960 to 1969—An Overview," *Monthly Labor Review*, July 1979, table 2.

cent for each year thereafter (100 percent vesting after 15 years of participation).

(3) "Rule of 45" (based on age and participation): 50 percent vesting for an employee with at least 5 years of participation when his or her age and years of participation add up to 45, plus 10 percent for each year thereafter.

Under any of these options, an employee must be at least 50 percent vested after 10 years of participation and 100 percent vested after 15 years, regardless of age.

Very few pension plans have adopted the "rule of 45" schedule.¹¹ Large plans, particularly those intended to provide basic retirement benefits, generally have adopted a 10-year cliff-vesting schedule. Small plans tend to have more rapid vesting schedules. According to a recent survey by the American Society of Pension Actuaries, 59-67 percent of the defined-benefit plans with 101-9,999 participants have a 10-year cliff-vesting schedule.¹² Substantially fewer defined-benefit plans with 100 or fewer participants use that schedule: 1-2 percent of plans with 10 or fewer participants, 14-19 percent with 11-22 participants, and 26 percent with 26-100 participants.

Many of these small plans were found to have vesting schedules more liberal than required by ERISA. A 4/40 vesting schedule, for example, is common in the smallest plans. This schedule provides 40 percent vesting after 4 years, increasing to 100 percent after 11 years, and may be adopted as a "safe harbor" from standard Internal Revenue Service audit procedures for discriminatory vesting. Tax-qualified pension plans are not permitted to discriminate in favor of highly paid employees and thus must document nondiscrimination unless they have adopted a 4/40 or more liberal vesting schedule or unless there is evidence of actual misuse.

A 4/40 schedule has been adopted by 34-37 percent of plans with fewer than 10 participants, by 5-14 percent of those with 11-25 participants, and by 12 percent of those with 26-100 participants. Many of the small plans have vesting standards even more liberal than the 4/40 schedule.

Methodology

Data Base

The data for this analysis were obtained from the 1972 and 1979 surveys of coverage and vesting under pension plans jointly sponsored by the Social Security

¹¹ American Society of Pension Actuaries, *An Analysis of the Characteristics of Small and Medium Size Employer Sponsored Private Retirement Plans and A Model Comparison of the Benefits and Costs Associated with Various Alternative Plan Types and Benefit Provisions*, Report to the President's Commission on Pension Policy, December 1980, table 15.

¹² *Ibid.*

Administration and the Department of Labor.¹³ Both pension surveys were supplements to the monthly Bureau of the Census Current Population Surveys (CPS). The primary emphasis in this article is on the 1979 data.

The term "pension plan," as used in the surveys, refers to employer-financed defined-benefit and defined-contribution plans designed to provide retirement benefits to employees. Excluded from this definition are IRA's and annuities purchased by individuals and Keogh accounts purchased by self-employed individuals for their own retirement. Keogh accounts provided to the employees of self-employed persons are considered pension plans.

Measurement of Vested Status, 1979

Survey respondents who indicated that they were active participants in pension plans on their current (May 1979) jobs were asked the following question to measure whether or not they had acquired vested rights to benefits:

If you left your employer and were no longer included in your present pension or retirement plan, could you receive some benefits at retirement age?

The vested data presented in this article are based on all possible responses to this question—yes, no, and don't know.

The vested rates cited here indicate the proportion of plan participants who *reported* that they were vested. They deviate from, and probably underestimate, the "true" proportion with vested benefits for two reasons. First, plan participants who did not know if they were vested—18 percent of all participants—were included in the base from which vested rates were derived. Exclusion of these participants would have resulted in higher vested rates. Second, only 78 percent of participants reporting 10 or more years of participation, instead of the 100 percent expected under ERISA, reported vested benefits. The technical note at the end of this article discusses the measurement of vested status in more detail and compares alternative definitions. The vested rates presented in this article are lower than those obtained under any of the alternatives examined.

The vested rates cannot be used to estimate the proportion of plan participants who will receive monthly retirement benefits based on their current jobs. Some nonvested participants will eventually acquire vested rights. Conversely, some vested participants, if and when they separate from their plans, will receive lump-sum benefits in exchange for monthly benefits. Finally, as indicated above, the rates probably underestimate the

¹³ A full report of the 1972 survey is presented in Walter W. Kolodrubetz and Donald M. Landay, "Coverage and Vesting of Full-Time Employees Under Private Retirement Plans," *Social Security Bulletin*, November 1973, pages 20-36. For more detail on the 1979 survey, see the technical note to this article.

proportion of current plan participants with vested benefits.

Statistical Procedure and Variables

A multidimensional contingency table program (ACT)¹⁴ was used to analyze the predictors of vested status in 1979. The ACT program, through the partitioning of chi square¹⁵ and logit analysis, makes it possible to determine whether each independent variable has an effect on vested status apart from the other variables studied and to determine whether and how its effect is conditioned by one or more of the other variables. Because years of participation is the key determinant of vested status, particular interest centered on whether the other independent variables affect vested status after accounting for years of participation and whether the nature of that effect is conditioned by the length of plan participation.

Two models were examined: a demographic and economic status model, and a labor-force and plan model. The independent variables included in each model are listed below:

Demographic and economic status model:

- Age
- Annual earnings
- Sex
- Race
- Years of participation

Labor-force and plan model:

- Occupation
- Size of firm
- Union representation
- Type of employer plan

All labor-force and plan characteristics refer to the principal job held at the time of the survey in May 1979 and are based on respondent reports. Years of participation refers to the number of years of membership in a plan counting toward retirement benefits. Annual earnings are estimated by multiplying usual weekly earnings on the principal job times weeks usually worked per year on that job. Size of firm is measured in terms of the number of employees at all of a firm's locations. It is positively related to but not synonymous with size of plan. The employees of small firms tend to belong to small plans but some belong to large, multiemployer

plans.¹⁶ Union representation measures whether workers were represented by labor organizations. The workers may or may not have belonged to those organizations, however. Type of employer plan indicates whether the plan was a single employer or a multi-employer plan.

Vested status, the dependent variable, was dichotomized into "vested" and "all other" responses. In other words, "no" and "don't know" responses were combined. Readers interested in the prevalence of "don't know" responses are referred to tables in the appendix. These tables present full responses to the vesting question—vested, not vested, and don't know—by individual characteristics and sex.

Vested Status by Selected Characteristics, 1979

Forty-eight percent of full-time workers actively participating in private pension plans in 1979 reported vested rights to benefits. Whether or not a participant reported vested benefits was highly related to the number of years of participation in the plan. Twenty-eight percent of full-time workers with less than 5 years of participation reported vested benefits, compared with 42 percent of those with 5-9 years and 78 percent of those with 10 or more years.

Years of participation was by far the strongest predictor of vested status. The predictive power of the other independent variables was much smaller, particularly after accounting for their relationships with years of participation. These conclusions are supported by the relative size of the entropy statistic, which is a measure of the strength of the relationship between independent and dependent variables. The entropy for years of participation was 0.147 when considered alone and 0.073 and 0.143 after accounting for the effects of all other variables in the demographic and economic status model and the labor-force and plan model, respectively.

The entropies of the other independent variables are displayed in the following tabulation. The first column indicates the entropy for each variable alone—that is, before accounting for the effects of the other variables in its model. The entropies indicate that, with the exception of age and earnings, the relationship between each independent variable and vested status is small. The second column indicates the entropy for each variable after accounting for the effects of years of participation. The entropies for age and earnings suggest that their apparent relationships to vested status are largely accounted for by their relationships with years of participation.

¹⁶ Two-thirds of plan participants in firms with fewer than 25 and 25-99 employees were members of single-employer plans and one-third were members of multiemployer plans. About three-fourths of those in larger firms belonged to single-employer plans.

¹⁴ ACT, produced by CSI/Datacrown, is a modification and expansion of Leo Goodman's ECTA program. This article's author is grateful to Elkan Halpern of CSI/Datacrown for his invaluable assistance in the use and interpretation of ACT. For a discussion of the theoretical foundation of the program, see Leo A. Goodman, *Analyzing Qualitative Categorical Data*, Abt Books, 1978.

¹⁵ The data analyzed in ACT were weighted to correct for sample design but were not inflated to produce population counts. Each person's weight was derived by dividing his or her CPS pension supplement weight by the average weight for all private wage and salary workers.

Model	Entropy	
	Alone	After accounting for years of participation
Demographic and economic status model:		
Age	0.069	0.006
Annual earnings .....	.024	.005
Sex .....	.006	.001
Race .....	.001	.000
Labor-force and plan model:		
Occupation .....	.006	.006
Size of firm .....	.005	.004
Union representation .....	.001	.001
Type of employer plan	<.001	.001

Despite the seemingly weak relationships between vested status and the independent variables other than years of participation, all but sex and union representation made statistically significant¹⁷ contributions to their models. Earnings, race, occupation, size of firm, and type of employer plan were involved in significant interactions with years of participation. This means that the nature (size or direction) of their relationships to vested status is contingent upon years of participation. The relationship of age to vested status, on the other hand, is approximately the same across all categories of years of participation. Sex and union representation are not significant predictors of vested status after accounting for their relationships with the other variables in their models. The nature of the relationships between vested status and age, earnings, race, occupation, size of firm, and type of employer plan are discussed in more detail below.

Demographic and Economic Status Characteristics

Older workers reported vested benefits more frequently than younger workers. The vested rates were 66 percent among plan participants aged 45 and older, 47 percent among those aged 30-44, and 27 percent among those under age 30. Since older workers on average had substantially longer plan participation, it is not surprising that they reported vested benefits more often. Even after taking length of participation into account, however, older workers were still more likely to report vested benefits, as noted in the tabulation in the next column.

Very few pension plans, as noted earlier, have adopted the "rule of 45" vesting schedule and thus the persistence of age differences among those with the same length of participation cannot be attributed to the existence of this schedule. It is possible, however, that the persistent age differences result from a greater sensi-

Age	1979 vested rates				Median years of participation
	Total	Years of participation			
		Less than 5	5-9	10 or more	
Under 30.	27	24	32	.....	2
30-44	47	30	42	73	7
45 and older	66	35	50	81	14

tivity to and awareness of vesting among older workers. The data in this survey cannot directly test this hypothesis, but the data in the following tabulation provide some tentative support. The proportion of plan participants who did not know if they were vested was lower among older than among younger workers even among those with the same length of participation.¹⁸

Age	1979 "don't know" rates			
	Total	Years of participation		
		Less than 5	5-9	10 or more
Under 30.	25	25	24	.....
30-44	19	22	15	14
45 and older	13	15	14	9

Another possible explanation for the persistent age differences is that older workers may be concentrated in plans with more liberal vesting schedules, perhaps because of their greater concern with retirement income. The results of the labor-force and plan model discussed later in this article suggest that multiemployer plans and plans covering professional and managerial workers and the employees of small firms have more liberal vesting schedules than other plans. Examination of the relationships between age and type of employer plan, occupation, and size of firm, however, indicates that older workers were no more likely than younger workers to have those characteristics associated with more liberal pension plans.

Race and earnings appear to have little meaningful effect on vested status. Substantial vesting differences by earnings and race occurred only among those with 10 or more years of participation, as shown on the next page. Among workers in this participation category, reported vested rates were higher in each successive earnings class and were higher among whites than among racial minorities. Since, under ERISA, 100 percent of the participants in qualified plans with 10 or more years of participation must be vested, the observed differences in vested rates could be attributed to respondent error. Although the reasons are not clear, the results suggest that high earners and whites may be more aware of the vest-

¹⁷ The level of significance set for this analysis is 0.05.

¹⁸ The reader will recall that, for analytical purposes, the "don't know" responses are combined with the "no" responses.

Annual earnings and race	1979 vested rates by years of participation		
	Less than 5	5-9	10 or more
Annual earnings:			
Less than \$10,000	23	40	64
\$10,000-\$14,999	30	42	74
\$15,000-\$19,999	30	38	78
\$20,000 or more.	31	45	84
Race:			
White	28	41	79
Black and other	26	45	67

ing provisions of their plans or the number of years of participation counting toward vested benefits than low earners and racial minorities.

Labor-Force and Plan Characteristics

Professional and managerial workers were more likely to report vested benefits than workers in other occupational groups even accounting for differences in years of participation, size of firm, and type of employer plan. Their greater propensity to report vested benefits within categories of years of participation is shown below.

Occupation	1979 vested rates by years of participation		
	Less than 5	5-9	10 or more
Professional and managerial workers ...	33	50	86
Clerical and sales workers	27	46	74
Blue-collar workers	27	34	75
Service workers	19	49	68

The largest difference in vested rates occurred among those with 10 or more years of participation and may reflect a greater awareness of vesting among professional and managerial workers. That a difference also occurred among those with less than 10 years of participation suggests that these workers tended to belong to plans with more liberal vesting schedules.

The relationship between size of firm and vested status was contingent upon years of participation. Among workers with fewer than 10 years in their plans, those employed in firms with fewer than 25 employees were much more likely to report vested benefits than workers in larger firms. This relationship did not hold among those with 10 or more years of participation, however. Within that participation category, workers employed in firms with 500 or more employees were more likely to report vested benefits than other workers.

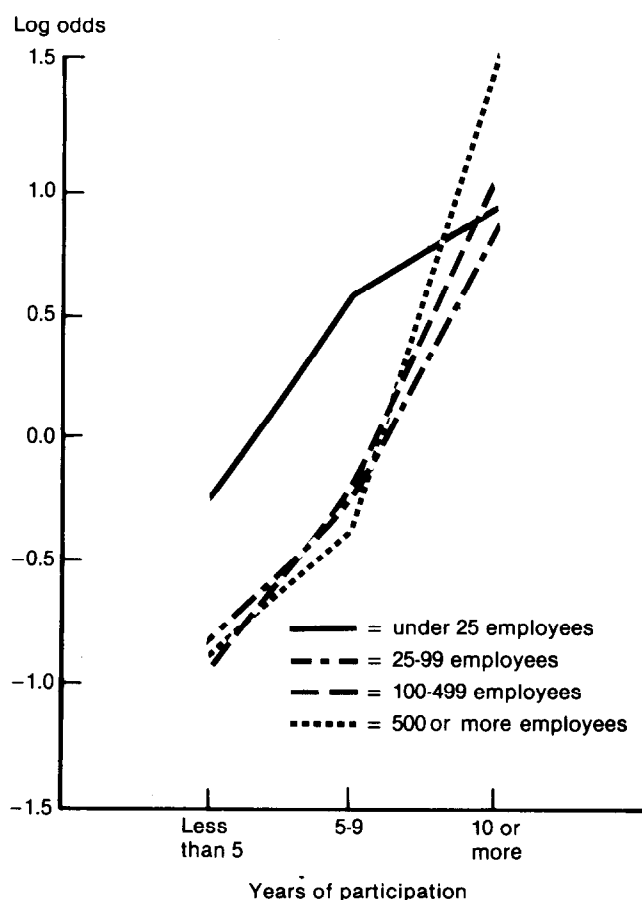
The relationships discussed above are displayed in the following tabulation and in chart I. The chart plots the logarithms of the odds of reporting vested benefits. Log-odds greater than 0 indicate vested rates greater

than 50 percent, and log-odds less than 0 indicate rates less than 50 percent. In addition to demonstrating the nature of the relationship between size of firm and vested status, chart 1 provides a graphic display of the steady and steep increase in reported vested rates with increases in years of participation for each size of firm category.

Size of firm (number of employees)	1979 vested rates by years of participation		
	Less than 5	5-9	10 or more
Fewer than 25	39	63	74
25-99	30	40	74
100-499	28	47	72
500 or more.	28	40	82

The results of this analysis suggest that plans covering the employees of very small firms tend to have more liberal vesting schedules than plans covering the employees of larger firms. This conclusion is reasonable in view of the data discussed earlier concerning the vesting schedules adopted by small plans (see pages 13-14). The re-

Chart 1. — Reporting of vested benefits by years of participation, 1979: Log odds for different sizes of firms



sults also suggest that employees in the largest firms may be somewhat more knowledgeable about vesting than employees in small firms.

The relationship between type of employer plan and vested status is also contingent upon years of participation. The only participation category in which there was a significant difference between the participants of single and multiemployer plans was the less-than-5-years category, as shown in the following tabulation and in chart 2. Within that category, those in multiemployer plans were more likely to report vested benefits than those in single-employer plans. Among participants in multiemployer plans, the probability of reporting vested benefits was nearly the same for those with fewer than 5 years of participation as it was for those with 5-9 years in their plans. Among those in single-employer plans, however, vested rates were much higher in the 5-9 years category than in the less-than-5-years category. These results suggest that multiemployer plans have more liberal vesting schedules than single-employer plans.

Type of employer plan	1979 vested rates by years of participation		
	Less than 5	5-9	10 or more
Single employer.	27	44	80
Multiemployer	37	40	78

Change in Vested Status, 1972-79

Vested Rates

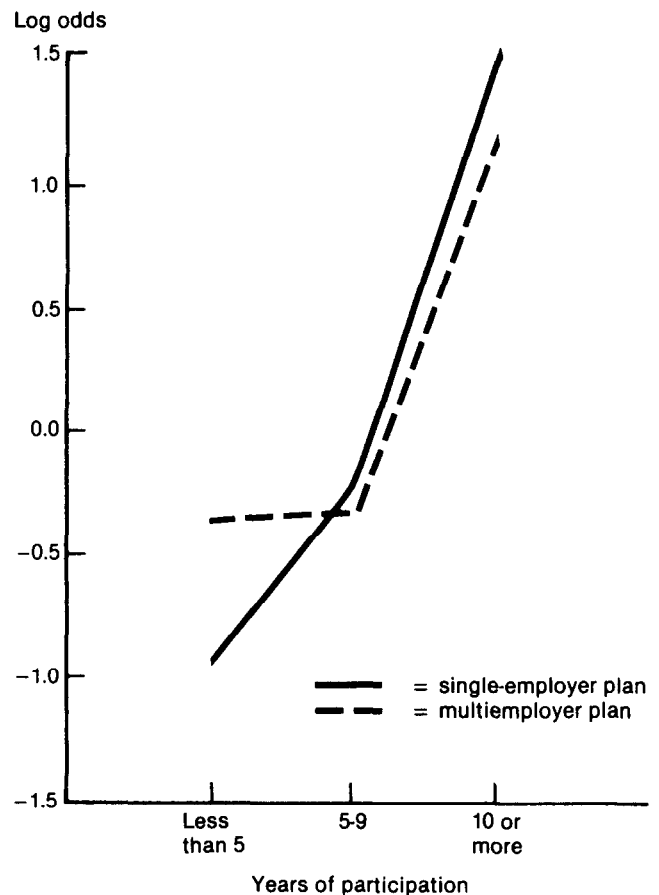
The proportion of full-time plan participants reporting vested benefits increased substantially between the 1972 and 1979 pension surveys—from 32 percent to 48 percent.¹⁹ The distribution of participants by years of service with their employer²⁰ was about the same in 1979 as it had been in 1972 (table 1). Therefore, the observed increase in reported vesting during the period cannot be attributed to any increase in length of service. Nor can it be attributed to any increase in knowledge of vesting since the proportion of participants who did not know if they were vested was actually higher in 1979 (18 percent) than it had been in 1972 (15 percent).

The increase, or at least part of it, undoubtedly resulted from the vesting standards mandated by ERISA. Vested rates increased 6 percentage points among participants with less than 5 years of service with their employer, 13 points among those with 5-9 years of service, and 30 points among those with 10 or more years of

¹⁹ In the 1972 survey, vested status was measured by responses to the following question: "If you should change to a job not covered by this plan, would you still be eligible to receive the plan's benefits at retirement age?"

²⁰ Years of service refer to years of service with the employer, not in the pension plan. Years of plan participation is not available for 1972.

Chart 2.—Reporting of vested benefits by years of participation, 1979: Log odds for single and multi-employer plans



service (table 2). In other words, the largest gain occurred among long-service employees, most of whom would have been vested in 1979 because of ERISA regulations.

Several other factors could have contributed to the increase in reported vested rates: The natural maturation of existing pension plans, differences in the amount of respondent and measurement error in the 1972 and 1979 surveys, and differences in questionnaire design. It is impossible to determine precisely how strongly each of these factors affected the increase.

Age. Vested rates increased more in the old than in the young age groups. For example, they increased 6 percentage points within the under-age-30 group and 26 points within the aged 50-and-older group. The age difference in vesting gains is largely a function of the fact that older plan participants had longer service than younger ones. Median years of service with the current employer in 1979 were: 3.6 for those under age 30, 7.4 for those aged 30-39, 12.0 for those aged 40-49, and 18.8 for those aged 50 and older. Among those with the same length of service, the percentage-point change in vested rates was nearly the same for all age groups (table 3).

Table 1.—Years of service with employer: Percentage distribution of full-time private workers participating in pension plans, 1972 and 1979

Years	Percentage distribution	
	1972	1979
Total percent	100	100
Less than 5	34	36
5-9	22	23
10-14	13	16
15-19	11	9
20 or more	21	17
Median years	8.6	8.0

Source (1972 data): Walter W. Kolodrubetz and Donald M. Landay, "Coverage and Vesting of Full-Time Employees Under Private Retirement Plans," *Social Security Bulletin*, November 1973, table 8.

Table 2.—Vested rates by years of service with employer, 1972 and 1979: Full-time private workers participating in pension plans

Years	Vested rates		Percentage-point change, 1972-79
	1972	1979	
Total	32	48	16
Less than 5	20	26	6
5-9	25	38	13
10-14	36	64	28
15-19	47	76	29
20 or more	51	81	30

Source (1972 data): See table 1, Walter W. Kolodrubetz and Donald M. Landay, table 8.

Table 3.—Vested rates by age and years of service with employer, 1972 and 1979: Full-time private workers participating in pension plans

Years	Age							
	Under 30		30-39		40-49		50 and older	
	1972	1979	1972	1979	1972	1979	1972	1979
	Vested rates							
Total	21	27	27	44	38	57	42	68
Less than 10	21	26	19	31	23	36	28	41
10-14			37	65	38	64	32	62
15-19			47	76	48	72	46	81
20 or more					51	82	51	81
	Percentage-point change, 1972-79							
Total	6		17		19		26	
Less than 10	5		12		13		13	
10-14			28		26		30	
15-19			29		24		35	
20 or more					31		30	

Source (1972 data): See table 1, Walter W. Kolodrubetz and Donald M. Landay, table 10.

Sex. The overall increase in reported vesting was about the same for women as for men: 15 and 17 percentage points, respectively (table 4). Among plan participants with 15 or more years of service, however,

Table 4.—Vested rates by sex and years of service with employer, 1972 and 1979: Full-time private workers participating in pension plans

Years	Vested rates				Percentage-point change, 1972-79	
	Men		Women		Men	Women
	1972	1979	1972	1979		
Total	34	51	26	41	17	15
Less than 5	21	28	16	21	7	5
5-9	25	38	24	37	13	13
10-14	36	67	34	57	31	23
15-19	49	76	39	77	27	38
20 or more	52	81	43	81	29	38

Source (1972 data): See table 1, Walter W. Kolodrubetz and Donald M. Landay, table 8.

women experienced larger vesting gains than men. The vested rates for participants in this service category increased 38 percentage points among women and 28 percentage points among men. In 1972, women with this much service were less likely than men to have reported vested benefits. By 1979, however, their vested rate was no different from that of men.

Annual earnings. The earnings variable used to compare 1972 and 1979 vesting data is expressed in 1971 dollars in order to adjust for inflation (table 5).²¹ Apart from the highest earnings category (\$25,000 or more), vesting gains tended to be higher in each successive earnings category studied—increasing from 7 percentage points for the under-\$5,000 category to 22-24 points for the \$15,000-\$24,999 category. The generally positive association between size of the vesting gain and earnings probably results from the positive association of both of these variables to years of service.

The vesting gain for the \$25,000-or-more category was nearly as low as the one observed for the lowest earnings category despite the fact that plan participants in this category tended to have longer service than other participants, as shown below. The vested rate for this group may be approaching an upper limit to the proportion of plan participants who can be expected to have earned vested benefits at any particular point in time.

Annual 1979 earnings (in 1971 dollars)	Median years of service with employer, 1979
Less than \$5,000	4.2
\$5,000-\$9,999	7.3
\$10,000-\$14,999	9.9
\$15,000-\$19,999	11.7
\$20,000-\$24,999	13.6
\$25,000 or more	14.2

Industry and occupation. Vesting gains, as shown in table 5, were highest within the following industries:

²¹ The 1972 survey used annual earnings in calendar year 1971. Thus 1979 earnings were multiplied by the ratio of 1971 to May 1979 consumer price indices (121.3 ÷ 214.3 or 0.566) in order to adjust for inflation.

Table 5.—Vested rates by earnings, industry, and occupation, 1972 and 1979: Full-time private workers participating in pension plans

Characteristic	Vested rates		Percentage-point change, 1972-79
	1972	1979	
Total	32	48	16
Earnings, in 1971 dollars			
\$1-\$4,999	24	31	7
\$5,000-\$9,999	30	45	15
\$10,000-\$14,999	37	56	19
\$15,000-\$19,999	43	67	24
\$20,000-\$24,999	48	70	22
\$25,000 or more	59	68	9
Industry			
Manufacturing:			
Durable goods	35	49	14
Nondurable goods	28	49	21
Trade:			
Wholesale	33	44	11
Retail	32	44	12
Service	33	45	12
Transportation, communications, utilities	31	54	23
Construction	35	52	17
Finance, insurance, real estate	28	47	19
Mining	30	50	20
Occupation			
Professional, technical	40	52	12
Managerial, administrative	40	59	19
Sales	31	42	11
Clerical	26	46	20
Craftsman	36	52	16
Operatives	27	43	16
Nonfarm laborers	29	43	14
Service workers	29	38	9

Source (1972 data): See table 1, Walter W. Kolodrubetz and Donald M. Lunday, tables 13, 14, 15.

Transportation, communications, and utilities (21 percentage points); nondurable goods manufacturing (21 percentage points); and mining (20 percentage points). The trade and service industries experienced the smallest gains (11-12 percentage points).

Service workers made smaller gains (9 percentage points) than workers in other occupations. The largest gain occurred among clerical workers. Members of this occupational group, which included only 7 percent of the men but 43 percent of the women plan participants in 1979, experienced a 20-percentage-point gain in vesting. The gain was also comparatively high for managerial and administrative workers.

Knowledge of Vesting

The proportion of plan participants who reported that they did not know if they were vested was slightly higher in 1979 (18 percent) than it had been in 1972 (15 percent). Despite ERISA's disclosure requirements, many plan participants, whatever their age, were uninformed about their plan's provisions concerning vesting

and their own vested status. Older plan participants were more knowledgeable than younger ones, but as shown below, many of them also were uninformed.

Age	1979 "don't know" rates
Under 30	25
30-44	19
45-54	14
55 and older	13

The ERISA legislation requires that plan administrators automatically furnish each participant with an easily readable summary plan description. It also requires that they automatically furnish a participant with details concerning his or her own vested benefit but only when he or she terminates employment or has a 1-year break in service. They are not required to provide this information to an active participant except at his or her written request. It appears that many participants have not taken advantage of their right to request this information or have forgotten information previously given to them.

Summary and Conclusions

This article examines the prevalence of vested benefits in 1979 as reported by full-time wage and salary workers actively participating in private pension plans and analyzes the effect of selected demographic, economic, labor-force, and plan characteristics on vested status. It also examines change in the prevalence of vesting after passage of ERISA by comparing data for 1972 and 1979.

In 1979, 48 percent of plan participants reported vested benefits. Analysis of the data using a multidimensional contingency table program revealed that, of the characteristics studied, years of plan participation had by far the strongest effect on reported vesting. As expected, plan participants with long service under their plans were much more likely to report vested benefits than participants with short service.

Older workers reported vested benefits more frequently than younger workers even after accounting for their longer plan participation. Evidence pertaining to occupation, size of firm, and type of employer plan suggests that multiemployer plans and those covering professional and managerial workers and the employees of the smallest firms have more rapid vesting schedules than plans covering other workers.

Sex and union representation were not significant predictors of vested status after accounting for their relationships with other characteristics. Moreover, race and earnings had little meaningful effect on vested status. What differences existed between earnings classes and among racial groups appear to reflect either differences

in years of participation or differences in knowledge of vesting.

The passage of ERISA in 1974 meant that tax-qualified private pension plans had to comply with minimum vesting standards. Although many plans already met these standards, some did not. The availability of data for both 1972 and 1979 permitted comparisons of vested rates before and after ERISA. The analysis suggests that ERISA had a major impact on increasing the prevalence of vested benefits.

The proportion of plan participants reporting vested benefits rose substantially from 1972 to 1979, from 32 percent to 48 percent. The most substantial increase occurred among participants with long service with their employer. The overall vesting gain for women was about the same as that for men. Among those with long service, however, the gain was larger for women. Vesting gains were greater for old than for young age groups, and, with some deviation, for high than for low earners. They were also greater for clerical and for managerial and administrative workers than they were for the members of other occupations, and greater for workers employed in the following industries: Transportation, communications, and utilities; nondurable goods manufacturing; and mining.

The increase in vesting that occurred during the 1970's undoubtedly will have a positive effect on the prevalence of private pension benefits among future retired generations. Many future retirees still will not receive these benefits, however, because many private workers remain uncovered by the private pension system. Moreover, of those currently covered, some will withdraw from their plans before qualifying for benefits, and others will exchange their vested rights to monthly retirement benefits for lump-sum benefits when they leave their plans.

Technical Note

Survey Design and Sample

The 1979 Survey of Pension Plan Coverage, jointly sponsored by the Social Security Administration and the Department of Labor, was a supplement to the May 1979 Current Population Survey (CPS). The CPS is a national sample of households in the United States (approximately 56,000 households in May 1979) conducted monthly by the Bureau of the Census to provide national estimates of employment, unemployment, and other labor-force characteristics of the civilian, non-institutionalized population.²²

The pension survey sample consisted of 31,749 employed persons aged 14 and older belonging to four of

the eight CPS rotation groups. Complete interviews were obtained from 27,253 of these persons. The data were weighted, using a special pension supplement weight, to correct for sample design and to reflect the total number of persons in the employed labor force aged 14 and older. The sample represents an estimated 72,056,000 private wage and salary workers, 15,932,000 government workers, and 8,575,000 self-employed individuals.

Questionnaire and Data File

The pension questionnaire gathered information in the following areas: Coverage and vesting under employer-financed pension plans on the principal job held during the survey week and on any job held previously, current individual contributions to IRA's and Keogh accounts, characteristics of the current pension plan (contributory status and type of employer plan), and current labor-force characteristics not available from the regular monthly CPS (union representation, size of establishment and firm, weeks usually worked for principal employer per year, years of service with employer, and years of participation in pension plan).

Data from the pension supplement were matched with data from the regular May CPS and with 1978 income and labor-force data from the March 1979 CPS and with earnings data from the June 1979 CPS. The data file also contains May CPS-1 and March supplement data for all nonemployed persons aged 14 and older who resided in the households of pension survey sample members.

The pension data were obtained directly from sample persons through personal interviews, either by telephone or in person. The other data, however, were obtained either directly from sample persons or from proxies if the sample persons were not at home at the time of contact.

Alternative Definitions of Vested Status

Vested status, as measured in this article, is based on full, unimputed responses to the vesting question cited on page 22. Knowledge of vesting was less than perfect, however, and this affects the interpretation of the results. Eighteen percent of the plan participants did not know if they were vested. Moreover, 22 percent of those claiming 10 or more years of participation in their plans did not report vested benefits. (Under ERISA, all participants in qualified pension plans with this length of service would be vested.) Because of the imperfect knowledge, the vested rates cited in this article should be interpreted as indicating the proportion of participants who reported vested benefits, not the "true" proportion who actually are vested.

²² A detailed description of the CPS is presented in **The Current Population Survey: Design and Methodology** (Technical Paper No. 40), Bureau of the Census, 1978.

Responses to the vesting question could be handled in several ways. The alternatives are:

- (1) Use of full, unimputed responses. This is the alternative used in this article.
- (2) Classification of all participants with 10 or more years of participation as vested regardless of their responses to the vesting question. Use of full, unimputed responses for all those with less than 10 years of participation.
- (3) Exclusion from the analysis of participants who didn't know if they were vested. This alternative assumes that these participants are randomly distributed among the known (vested and nonvested) categories.
- (4) Classification of all participants with 10 or more years of participation as vested regardless of responses to the vesting question. Exclusion of participants with less than 10 years if they didn't know if they were vested.
- (5) Imputation of "don't know" responses. This procedure has been implemented by ICF Incorporated and is described below.

The vested rates for full-time private wage and salary plan participants obtained under alternatives 1-4 are presented in table I.

ICF, using regression analysis and other procedures, imputed vested status for some plan participants.²³ Participants with less than 10 years in their plans who didn't know if they were vested were imputed as vested or not vested based on the results of a regression analysis. All participants with 10 or more years in their plans were classified as vested regardless of their responses to the vesting question. The tabulation in the next column compares the vested rates for full-time, full-year private wage and salary plan participants obtained under alternative 1 and the ICF imputation procedure. (Full-time, full-year workers are those who usually work 35 or more hours per week and 48 or more weeks per year.)

A comparison of the five alternatives shows that alternative 1 produces the lowest vested rates and alternative 4 the highest. Alternative 1 was selected for this article for several reasons. First, the extent of incomplete and inaccurate information concerning vested status is an important datum that needs reporting.

Second, an examination of the characteristics of participants who didn't know if they were vested suggests that these participants are not randomly distributed

²³ For a more detailed discussion of the imputation procedures, see **Background Analysis of the Potential Effects of a Minimum Universal Pension System (MUPS)**, a final report prepared by ICF Incorporated for the President's Commission on Pension Policy and the Department of Labor, Pension and Welfare Benefit Programs, Appendix B, April 1981.

Age and industry	1979 vested rates	
	Alternative 1	ICF imputation
Total, aged 16 and older . . .	49	57
Age:		
20-64	49	59
25-64	52	63
35-64	61	73
45-64	66	80
Industry:		
Manufacturing	50	55
Trade	44	56
Service	45	62
Construction	54	72
Mining	51	57

Source: ICF, Inc. final report, April 1981, Appendix E, tables E-9 and E-10.

among vested and nonvested participants but are primarily nonvested.²⁴ Years of participation, as discussed earlier, is by far the most important determinant of vested status. Age, size of firm, occupation, and type of employer plan also are related to vested status, but the magnitude of their effects are much smaller. Tables II and III compare "don't know" participants with both nonvested and vested participants on each of these five characteristics. The data show that "don't know" participants were much more similar to nonvested than to vested participants on years of participation, age, and occupation. To illustrate, 41 percent of "don't know" and 44 percent of nonvested participants, compared with 15 percent of the vested participants, had been in their plans for only 1 or 2 years. Conversely, 23, 11, and 57 percent of these participants, respectively, had been in their plans for 10 or more years. Since "don't know" participants resemble nonvested participants on key variables related to vested status, it is reasonable to assume that they are much more likely to be nonvested than vested. This conclusion is supported by results of the ICF imputation procedure: of participants who didn't know if they were vested, approximately 80 percent were imputed to be nonvested.

Third, one of the objectives of this article is to compare changes in vested rates occurring between the 1972 and 1979 pension surveys in order to evaluate the effects of ERISA. Use of an imputation procedure, such as developed by ICF, would have made it impossible to compare 1979 data with published 1972 data. It would also make comparisons with future pension surveys difficult.

Supplementary Tables

Tables IV-XIV are presented for readers interested in more detailed information than presented in the text.

²⁴ For a discussion of how to handle "don't know" responses and the assumption of randomness, see Hans Zeisel, **Say It With Figures**, 3d edition, Harper & Brothers, 1950; and Joe D. Francis and Lawrence Busch, "What We Know About 'I Don't Knows,'" **The Public Opinion Quarterly**, summer 1975, pages 207-218.

Table I.—Vested rates obtained under alternative definitions of vested status, by employee characteristics, 1979: Full-time, private workers participating in pension plans

Characteristic	Alternative 1			
	1	2	3	4
Total	48	56	59	65
Years of plan participation:				
Less than 5	28	28	36	36
5-9	42	42	50	50
10-14	70	100	82	100
15 or more	84	100	91	100
Age:				
Under 30	27	27	36	36
30-44	47	56	58	65
45 and older	66	78	76	84
Earnings:				
Less than \$10,000	33	40	46	52
\$10,000-\$14,999	45	52	56	63
\$15,000-\$19,999	51	60	61	68
\$20,000 or more	61	69	69	75
Sex:				
Men	51	59	62	68
Women	41	48	52	58
Race:				
White	49	57	59	66
Black	42	51	58	66
Other	42	45	55	58
Occupation:				
White-collar workers	51	56	60	65
Professional, technical workers	52	55	61	63
Managerial, administrative workers	59	66	67	72
Sales workers	42	48	50	55
Clerical workers	46	54	57	63
Blue-collar workers	47	56	59	67
Craftsmen	52	62	62	71
Operatives	43	52	56	63
Nonfarm laborers	43	52	56	64
Service workers	38	45	52	58
Size of firm (number of employees):				
Fewer than 25	52	58	66	69
25-99	44	51	55	62
100-499	44	52	55	61
500 or more	52	60	61	67
Union coverage:				
Union	49	60	62	70
Nonunion	48	53	58	62
Type of employer plan:				
Single employer	50	57	58	64
Multiemployer	53	61	63	70
Industry:				
Manufacturing	49	58	61	67
Trade	44	50	54	59
Services	45	51	57	62
Transportation, communications, utilities	52	65	62	72
Construction	52	61	65	72
Finance, insurance, real estate	47	51	55	59
Mining	50	54	60	62

¹ Refer to page 21 for description of alternative definitions.

Tables IV-XIII display full responses to the vesting question—vested, not vested, and don't know—by demographic, labor-force, and plan characteristics, many of which are categorized in more detail than supplied in the text tables. Each table presents data for all plan participants and for men and women participants

Table II.—Years of participation and vested status, 1979: Full-time private workers participating in pension plans

Years	Percentage distribution			Percent responding don't know
	Vested	Not vested	Don't know	
Total number (in thousands)	13,397	9,305	4,691	
Total percent	100	100	100	
1-2	15	44	41	24
3-4	9	17	14	19
5-9	19	27	22	17
10-14	21	7	13	14
15 or more	36	5	10	8

Table III.—Characteristics of plan participants by vested status and years of participation, 1979: Full-time private workers participating in pension plans

Characteristic and years of participation	Vested	Not vested	Don't know
Total:			
Percent aged 45 or older	48	22	23
Percent in firms with less than 25 employees	9	7	12
Percent in professional and managerial occupations	31	26	20
Percent in multiemployer plans	26	22	27
Median years of participation	11.7	3.7	4.3
Less than 10 years of participation:			
Percent aged 45 or older	25	18	14
Percent in firms with less than 25 employees	14	8	11
Percent in professional and managerial occupations	32	27	22
Percent in multiemployer plans	27	22	27
Median years of participation	4.5	3.1	2.8
10 or more years participation:			
Percent aged 45 or older	65	56	54
Percent in firms with less than 25 employees	5	4	11
Percent in professional and managerial occupations	31	19	15
Percent in multiemployer plans	25	28	27
Median years of participation	17.2	13.9	14.2

separately. Table XIV presents median years of participation and the proportion of participants with 10 or more years of participation by each characteristic and sex.

Table I on page 11 of this issue presents the standard errors of estimated percentages of persons in the pension survey. These standard errors can be used to construct confidence intervals about the estimated percentages presented in tables IV-XIII.

Reliability of Estimates

Since the estimates in this report are based on a sample, they may differ somewhat from the figures that would have been obtained had a complete census been taken using the same schedule, instructions, and enumerators. There are two types of errors possible in an estimate based on a sample survey—sampling and non-sampling. The standard errors provided in table XV

Table IV.—Vested status by years of participation and sex, 1979: Percentage distribution among full-time private workers participating in pension plans

Years	Number (in thousands)	Percentage distribution ¹	Total percent	Vested status		
				Vested	Not vested	Don't know
Total						
Total	² 28,843	100	100	48	33	18
1-4	11,418	42	100	28	49	23
5-9	6,186	22	100	42	41	17
10-14	4,062	15	100	70	16	14
15 or more	5,727	21	100	84	8	8
Men						
Total	² 20,549	100	100	51	32	17
1-4	7,391	38	100	29	49	22
5-9	4,369	22	100	41	41	18
10-14	3,077	16	100	72	15	13
15 or more	4,724	24	100	84	9	7
Women						
Total	² 8,294	100	100	41	38	21
1-4	4,027	51	100	25	50	24
5-9	1,817	23	100	43	42	15
10-14	985	13	100	63	16	20
15 or more	1,002	13	100	83	7	10

¹ Excludes those for whom years of participation are unknown.

² Includes those for whom years of participation are unknown.

Table V.—Vested status by age and sex, 1979: Percentage distribution among full-time private workers participating in pension plans

Age	Number (in thousands)	Percentage distribution	Total percent	Vested status		
				Vested	Not vested	Don't know
Total						
Total	28,843	100	100	48	33	18
Under 30	7,739	26	100	27	48	25
30-44	10,840	38	100	47	34	19
30-34	4,248	15	100	38	41	21
35-39	3,564	12	100	51	31	17
40-44	3,028	10	100	54	28	17
45 or older	10,263	36	100	66	21	13
45-49	3,000	10	100	60	26	14
50-54	3,014	10	100	67	22	11
55 or older	4,250	15	100	69	18	13
55-59	2,606	9	100	69	19	12
60 or older	1,643	6	100	70	15	15
Men						
Total	20,549	100	100	51	32	17
Under 30	5,181	25	100	28	48	24
30-44	7,932	39	100	50	33	17
30-34	3,077	15	100	38	41	20
35-39	2,663	13	100	55	30	15
40-44	2,192	11	100	58	25	16
45 or older	7,436	36	100	69	19	12
45-49	2,176	11	100	63	24	13
50-54	2,154	10	100	72	18	9
55 or older	3,106	15	100	71	16	13
55-59	1,944	9	100	70	17	13
60 or older	1,162	6	100	72	13	15
Women						
Total	8,294	100	100	41	38	21
Under 30	2,558	31	100	24	49	27
30-44	2,908	35	100	40	38	22
30-34	1,171	14	100	37	41	22
35-39	901	11	100	41	37	22
40-44	836	10	100	44	35	21
45 or older	2,828	34	100	58	27	15
45-49	824	10	100	53	29	18
50-54	860	10	100	54	30	16
55 or older	1,143	14	100	65	22	13
55-59	662	8	100	64	25	11
60 or older	481	6	100	66	19	15

Table VI.—Vested status by race and sex, 1979: Percentage distribution among full-time private workers participating in pension plans

Race	Number (in thousands)	Percentage distribution	Total percent	Vested status		
				Vested	Not vested	Don't know
Total						
Total.....	28,843	100	100	48	33	18
White.....	25,738	89	100	49	34	17
Black and others.....	3,105	11	100	42	30	28
Black.....	2,585	9	100	42	30	28
Others.....	520	2	100	42	34	24
Men						
Total.....	20,549	100	100	51	32	17
White.....	18,485	90	100	52	32	16
Black and others.....	2,064	10	100	44	28	28
Black.....	1,738	8	100	44	28	28
Others.....	326	2	100	45	26	29
Women						
Total.....	8,294	100	100	41	38	21
White.....	7,253	87	100	42	38	20
Black and others.....	1,041	13	100	37	35	28
Black.....	847	10	100	37	32	31
Others.....	194	2	100	36	47	17

Table VII.—Vested status by annual earnings and sex, 1979: Percentage distribution among full-time private workers participating in pension plans

Annual earnings	Number (in thousands)	Percentage distribution ¹	Total percent	Vested status		
				Vested	Not Vested	Don't know
Total						
Total.....	² 28,483	100	100	48	33	18
\$1-\$9,999.....	5,616	20	100	33	40	27
\$10,000-\$14,999.....	7,998	29	100	45	35	20
\$15,000-\$19,999.....	6,993	25	100	51	32	17
\$20,000-\$24,999.....	3,612	13	100	55	32	13
\$25,000 or more.....	3,518	13	100	67	23	10
Men						
Total.....	² 20,549	100	100	51	32	17
\$1-\$9,999.....	1,942	10	100	32	38	30
\$10,000-\$14,999.....	5,003	25	100	45	35	20
\$15,000-\$19,999.....	5,996	30	100	52	32	17
\$20,000-\$24,999.....	3,412	17	100	55	32	14
\$25,000 or more.....	3,363	17	100	67	23	9
Women						
Total.....	² 8,294	100	100	41	38	21
\$1-\$9,999.....	3,675	46	100	34	40	25
\$10,000-\$14,999.....	2,996	37	100	46	35	19
\$15,000-\$19,999.....	997	12	100	48	35	16
\$20,000-\$24,999.....	201	2	100	60	28	11
\$25,000 or more.....	154	2	100	63	22	14

¹ Excludes those for whom annual earnings are unknown.

² Includes those for whom annual earnings are unknown.

primarily indicate the magnitude of the sampling error. They also partially measure the effect of some non-sampling errors in response and enumeration but do not measure any systematic biases in the data. The full extent of the nonsampling error is unknown. Consequently, particular care should be exercised in the interpretation of figures based on a relatively small number of cases or on small differences between estimates.

Nonsampling variability. Nonsampling errors in surveys can be attributed to many sources. These sources

include: Inability to obtain information about all cases in the sample, definitional difficulties, differences in the interpretation of questions, inability or unwillingness of respondents to provide correct information, inability to recall information, errors made in collection such as in recording or coding the data, errors made in processing the data, errors made in estimating values for missing data, and failure to represent all units within the sample (undercoverage).

Sampling variability. The standard errors given in

Table VIII.—Vested status by occupation and sex, 1979: Percentage distribution among full-time private workers participating in pension plans

Occupation	Number (in thousands)	Percentage distribution ¹	Total percent	Vested status		
				Vested	Not vested	Don't know
Total						
Total.....	28,843	100	100	48	33	18
White collar.....	14,251	49	100	51	34	16
Professional, technical.....	4,343	15	100	52	34	14
Managerial, administrative.....	3,533	12	100	59	29	12
Sales.....	1,375	5	100	42	42	16
Clerical.....	4,999	17	100	46	35	19
Blue collar.....	13,319	46	100	47	33	20
Craftsmen.....	5,588	19	100	52	31	17
Operatives.....	6,497	23	100	43	34	23
Nonfarm laborers.....	1,234	4	100	43	33	24
Service workers.....	1,177	4	100	38	35	27
Men						
Total.....	20,549	100	100	51	32	17
White collar.....	8,655	42	100	55	32	14
Professional, technical.....	3,232	16	100	55	32	13
Managerial, administrative.....	2,910	14	100	61	28	11
Sales.....	1,100	5	100	45	42	13
Clerical.....	1,413	7	100	51	31	18
Blue collar.....	11,249	55	100	49	32	19
Craftsmen.....	5,366	26	100	53	31	16
Operatives.....	4,768	23	100	46	32	22
Nonfarm laborers.....	1,114	5	100	43	32	25
Service workers.....	562	3	100	38	35	27
Women						
Total.....	8,294	100	100	41	38	21
White collar.....	5,596	67	100	44	37	19
Professional, technical.....	1,111	13	100	43	40	17
Managerial, administrative.....	624	8	100	53	35	12
Sales.....	275	3	100	34	40	26
Clerical.....	3,586	43	100	44	36	20
Blue collar.....	2,070	25	100	35	40	26
Craftsmen.....	221	3	100	29	39	32
Operatives.....	1,730	21	100	35	40	25
Nonfarm laborers.....	119	2	100	43	38	19
Service workers.....	615	7	100	37	35	28

¹ Farm occupations are included in distribution but are not shown.

Table IX.—Vested status by size of firm and sex, 1979: Percentage distribution among full-time private workers participating in pension plans

Size of firm (number of employees)	Number (in thousands)	Percentage distribution ¹	Total percent	Vested status		
				Vested	Not vested	Don't know
Total						
Total.....	² 28,843	100	100	48	33	18
1-24.....	2,079	9	100	52	27	21
25-99.....	2,420	10	100	44	36	19
100-499.....	3,225	14	100	44	37	19
500 or more.....	15,828	67	100	52	34	14
Men						
Total.....	² 20,549	100	100	51	32	17
1-24.....	1,523	9	100	55	24	20
25-99.....	1,767	10	100	47	34	18
100-499.....	2,169	13	100	49	34	17
500 or more.....	11,544	68	100	55	32	13
Women						
Total.....	² 8,294	100	100	41	38	21
1-24.....	556	8	100	44	35	22
25-99.....	654	10	100	36	42	21
100-499.....	1,056	16	100	35	42	23
500 or more.....	4,284	65	100	45	38	17

¹ Excludes those for whom size of firm is unknown.

² Includes those for whom size of firm is unknown.

Table X.—Vested status by industry and sex, 1979: Percentage distribution among full-time private workers participating in pension plans

Industry	Number (in thousands)	Percentage distribution ¹	Total percent	Vested status		
				Vested	Not vested	Don't know
Total						
Total.....	28,843	100	100	48	33	18
Manufacturing.....	13,160	46	100	49	32	18
Durable.....	8,510	30	100	49	33	17
Nondurable.....	4,650	16	100	49	30	20
Trade.....	4,241	15	100	44	38	18
Wholesale.....	1,676	6	100	44	39	17
Retail.....	2,564	9	100	44	38	18
Service.....	3,882	13	100	45	34	21
Nonprofessional.....	897	3	100	41	36	23
Professional.....	2,984	10	100	47	33	21
Transportation, communications, utilities...	3,079	11	100	52	32	16
Construction.....	1,552	5	100	52	28	20
Finance, insurance, real estate.....	2,256	8	100	47	38	15
Mining.....	501	2	100	50	34	16
Men						
Total.....	20,549	100	100	51	32	17
Manufacturing.....	10,019	49	100	52	31	17
Durable.....	6,658	32	100	52	32	16
Nondurable.....	3,361	16	100	52	28	20
Trade.....	3,030	15	100	47	36	17
Wholesale.....	1,321	6	100	45	36	18
Retail.....	1,709	8	100	48	35	17
Service.....	1,947	9	100	49	32	19
Nonprofessional.....	681	3	100	45	37	18
Professional.....	1,266	6	100	52	29	19
Transportation, communications, utilities...	2,431	12	100	54	31	15
Construction.....	1,482	7	100	52	27	20
Finance, insurance, real estate.....	1,039	5	100	50	39	11
Mining.....	459	2	100	50	34	16
Women						
Total.....	8,294	100	100	41	38	21
Manufacturing.....	3,140	38	100	41	37	23
Durable.....	1,851	22	100	40	37	23
Nondurable.....	1,289	16	100	42	36	22
Trade.....	1,210	14	100	37	45	18
Wholesale.....	356	4	100	41	47	11
Retail.....	855	10	100	34	44	22
Service.....	1,934	23	100	41	36	23
Nonprofessional.....	216	2	100	27	36	37
Professional.....	1,718	21	100	43	36	21
Transportation, communications, utilities...	648	8	100	46	37	17
Construction.....	70	1	100	(2)	(2)	(2)
Finance, insurance, real estate.....	1,217	15	100	44	37	19
Mining.....	42	1	100	(2)	(2)	(2)

¹ Agriculture is included in distribution but is not shown.

² Not shown; base is less than 150,000.

table XV are primarily measures of sampling variability, that is, of the variation that occurred by chance because a sample rather than the entire population was surveyed. The sample estimate and its estimated standard error enable one to construct confidence intervals, ranges that would include the average result of all possible samples with a known probability. For example, if all possible samples were selected, if each of those were surveyed under essentially the same general conditions and using the same sample design, and if an estimate and its estimated standard error were calculated from each sample, then—

(1) approximately 68 percent of the intervals from 1 standard error below the estimate to 1 standard error above the estimate would include the average result of

all possible samples;

(2) approximately 90 percent of the intervals from 1.6 standard errors below the estimate to 1.6 standard errors above the estimate would include the average result of all possible samples; and

(3) approximately 95 percent of the intervals from 2 standard errors below the estimate to 2 standard errors above the estimate would include the average result of all possible samples.

The average estimate derived from all possible samples is or is not contained in any particular computed interval. For a particular sample, however, one can say with a specified confidence that the average estimate derived from all possible samples is included in the confidence interval.

Table XI.—Vested status by union representation and sex, 1979: Percentage distribution among full-time private workers participating in pension plans

Union representation	Number (in thousands)	Percentage distribution ¹	Total percent	Vested status		
				Vested	Not vested	Don't know
Total						
Total.....	² 28,843	100	100	48	33	18
Union.....	11,800	42	100	49	30	20
Nonunion.....	16,580	58	100	48	35	17
Men						
Total.....	² 20,549	100	100	51	32	17
Union.....	9,511	47	100	51	29	19
Nonunion.....	10,759	53	100	51	34	15
Women						
Total.....	² 8,294	100	100	41	38	21
Union.....	2,288	28	100	41	35	23
Nonunion.....	5,822	72	100	42	38	20

¹ Excludes those for whom union representation is unknown.

² Includes those for whom union representation is unknown.

Table XII.—Vested status by type of employer plan and sex, 1979: Percentage distribution among full-time private workers participating in pension plans

Type of employer plan	Number (in thousands)	Percentage distribution ¹	Total percent	Vested status		
				Vested	Not vested	Don't know
Total						
Total.....	² 28,843	100	100	48	33	18
Single employer.....	17,335	75	100	50	36	14
Multiemployer.....	5,686	25	100	53	31	16
Men						
Total.....	² 20,549	100	100	51	32	17
Single employer.....	12,243	73	100	53	34	13
Multiemployer.....	4,461	27	100	55	30	15
Women						
Total.....	² 8,294	100	100	41	38	21
Single employer.....	5,092	81	100	43	40	17
Multiemployer.....	1,225	19	100	47	37	16

¹ Excludes those for whom type of employer plan is unknown.

² Includes those for whom type of employer plan is unknown.

Table XIII.—Vested status by contributory status of plan by sex, 1979: Percentage distribution among full-time private workers participating in pension plans

Contributory status of plan	Number (in thousands)	Percentage distribution ¹	Total percent	Vested status		
				Vested	Not vested	Don't know
Total						
Total.....	² 28,843	100	100	48	33	18
Contributory.....	10,010	35	100	52	29	19
Noncontributory.....	18,643	65	100	46	36	18
Men						
Total.....	² 20,549	100	100	51	32	17
Contributory.....	7,414	36	100	54	27	19
Noncontributory.....	13,013	64	100	50	34	16
Women						
Total.....	² 8,294	100	100	41	38	21
Contributory.....	2,596	32	100	46	33	20
Noncontributory.....	5,630	68	100	39	40	21

¹ Excludes those for whom contributory status is unknown.

² Includes those for whom contributory status is unknown.

Table XIV.—Years of participation by sex and selected characteristics, 1979: Full-time private workers participating in pension plans

Characteristic	Years of participation						Characteristic	Years of participation					
	Median			Percent with 10 or more				Median			Percent with 10 or more		
	Total	Men	Women	Total	Men	Women		Total	Men	Women	Total	Men	Women
Total	6.7	7.7	4.9	36	40	25	Industry:						
Age:							Manufacturing.....	7.7	8.6	5.4	40	43	30
Under 30	1.7	1.8	1.2	2	2	2	Durable	7.8	8.6	5.9	41	44	29
30-44	7.0	7.8	4.9	33	37	21	Nondurable	7.7	8.7	5.0	40	43	30
45-54	13.3	15.7	8.9	63	70	44	Trade	5.0	5.8	4.0	24	27	18
55 and older	14.7	16.4	12.7	67	68	64	Wholesale.....	4.8	5.6	3.7	25	28	15
Earnings:							Retail	5.2	5.7	4.3	24	27	20
\$1-\$9,999	3.3	2.9	3.5	19	21	19	Service	4.6	5.0	4.2	23	29	17
\$10,000-\$14,999	5.8	6.0	5.8	30	30	28	Nonprofessional.....	4.3	4.5	3.7	28	29	22
\$15,000-\$19,999	8.1	8.3	7.3	41	42	34	Professional	4.5	5.0	4.3	22	29	17
\$20,000-\$24,999	9.2	9.2	8.0	47	47	43	Transportation, communica-						
\$25,000 or more	11.4	11.6	8.8	56	57	42	tions, utilities	10.0	10.9	8.3	50	52	43
Race:							Construction	7.4	8.0	(1)	39	40	(1)
White	7.0	8.0	4.7	37	41	26	Finance, insurance, real						
Black and others	5.6	5.9	5.1	27	31	19	estate	5.8	6.9	4.8	30	35	25
Black	6.0	6.2	5.1	29	32	23	Mining	6.2	6.4	(1)	37	37	(1)
Others	4.6	4.6	4.6	19	26	8	Union representation:						
Occupation:							Union	8.9	9.3	6.7	45	47	36
White collar	6.4	7.3	4.9	33	38	25	Nonunion	5.4	6.4	4.5	29	33	21
Professional, technical	5.7	6.7	4.4	32	38	17	Size of firm (number of						
Managerial, administra-							employees):						
tive	7.9	8.8	5.0	40	43	29	1-24	4.9	5.6	3.4	23	27	12
Sales	4.4	4.6	3.5	23	22	26	25-99	5.0	5.9	3.9	28	31	20
Clerical	5.9	8.2	5.2	32	43	26	100-499	5.2	6.4	3.8	28	32	19
Blue collar	7.6	8.3	4.7	39	42	28	500 or more	8.0	8.9	6.2	40	45	31
Craftsmen	8.9	9.1	4.9	45	46	27	Contributory status of plan:						
Operatives	6.8	7.5	4.6	36	38	28	Contributory	7.0	7.7	4.7	35	39	26
Nonfarm laborers	6.4	6.4	4.9	34	34	25	Noncontributory	6.8	7.8	4.9	36	40	25
Service workers	5.2	5.8	4.8	26	28	23	Type of employer plan:						
							Single employer	7.2	8.0	5.2	36	41	26
							Multiemployer	7.4	8.4	4.6	38	42	24

¹ Not shown; base is less than 150,000.