

How social security payments affect private pensions

Coordinating the two sources of retirement income tends to lower employer costs for private pension plans, and results in private pensions which replace a larger percentage of preretirement earnings for higher paid workers

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Many workers look forward to receiving benefits from private pension plans as well as from social security. Half of all full-time wage and salary workers in private industry in May 1979 were covered by pension plans;¹ nearly all of them were also under the social security system. This dual retirement income has fostered interest in coordinating public and private plans. Often, social security payments are considered when setting the terms of private pension plans.

There are two types of private pensions plans: defined contribution plans, which require an employer to contribute a specified amount of money into a pension fund; and defined benefit plans, which provide specified benefits according to a formula taking into account an employee's years of service, or earnings, or both. A defined contribution plan does not promise a predetermined level of benefits—the benefits paid at retirement depend on the amount credited to an employee. In a defined benefit plan, pension benefits are predetermined and the employer must make contributions adequate to finance those benefits. Both types of plans may reflect the existence of social security (Old-Age, Survivors, and Disability Insurance) either implicitly, by informally providing lower annuities than would be the case if social security benefits were not available; or explicitly, by formally recognizing the existence of social security.²

Plans which explicitly acknowledge social security benefits are called *integrated plans*. Their formulas generally recognize not only the level but also the underlying structure of social security benefits. For example, social security benefits as a percent of preretirement earnings (replacement rates) are greater for low-wage earners than for high-wage earners. Some employers counter this difference by using a

benefit formula which results in greater replacement rates under the private plan for high-wage earners. Internal Revenue Service regulations, discussed later, govern the extent to which this is permissible.

Proponents of integrated private plans maintain that coordinating private pensions and social security benefits yields equitable retirement income for all workers, regardless of earnings, while keeping employer costs within reasonable bounds. (Employers often contend that their payment of social security taxes should be considered when determining outlays for private benefits.³) On the other hand, critics stress that integrated private plans may provide low benefits—or none at all—to low-wage earners.⁴

Information on integrated private pension plans was obtained from the Bureau of Labor Statistics' annual survey on the incidence and characteristics of employee benefit plans in medium and large firms.⁵ Of the 914 defined benefit pension plans studied in 1981, 521, or nearly three-fifths, were integrated. Most of the integrated plans (60 percent) reduced private pensions by a portion of the social security payment. The remainder (40 percent) were coordinated with social security through percent-of-earnings benefit formulas that applied different percentages to earnings above and below specified dollar levels.

Defined benefit plans which integrate by deducting a portion of the social security payments are called *offset plans*. Those which establish higher pension formulas for earnings above a specified level than for those below are called *excess plans*; the earnings level is related to the maximum wage subject to social security taxation (the "taxable wage base"), which was \$29,700 in 1981. (Integrated defined contribution plans, excluded from this study, follow the excess approach; contribution rates, expressed as a percent of earnings, are higher on earnings above a specified level than below.)

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Offset plans

Sixty percent of all the integrated plans included in the study were offset plans. The formula in an offset plan and its effect on replacement rates (annuity as a percent of earnings in the final year of work) are illustrated in the following:

Two employees retired at the beginning of 1981 after 30 years of service; one earned \$20,000 in 1980 and the other, \$30,000. Both employees were covered by a private pension plan with a typical offset provision which provides pensions equal to 1.5 percent of average earnings in the five highest

earnings years ("high-five" average earnings) multiplied by years of service, less 50 percent of primary social security benefits (excluding benefits for spouses or other dependents). The workers' earnings were not constant over the years. Therefore, it is necessary to estimate their earnings in each of the years affecting the private pension and social security benefit calculations. The estimated "high-five" average earnings used here were calculated from assumed earnings histories developed by the Social Security Administration, which also provided the social security benefits. Replacement rates were calculated by dividing each benefit by the workers' earnings in the last year of work.⁶

Glossary of pension terms

Analysis of pension plan provisions is complicated by technical terms which permeate the pension literature. The use of these terms cannot be avoided. However, each of the technical terms used in this article is defined below.

Career earnings formula. A formula which bases pension benefits on average earnings in all years of credited service.

Defined benefit plan. A pension plan which includes a formula for calculating retirement benefits (such as a specified percent of earnings or flat dollar amount per year of service) and obligates the employer to provide the benefits so determined. Therefore, employer contributions are not fixed, but are whatever is needed, together with earnings of pension fund investments, to finance the required benefits.

Defined contribution plan. A pension plan that obligates the employer to contribute money to a pension fund according to a formula (such as a specified percent of earnings). Benefits are not fixed, but depend on the amount of employer contributions and the earnings of pension fund investments.

Early retirement. Retirement before the normal retirement age. Early retirement pensions depend on earnings and service, but are reduced for each year prior to the normal retirement age.

Excess plan. An integrated pension plan which provides relatively higher pensions on earnings above a specified level than on earnings below that level. A pure excess plan calculates pensions only on earnings above the specified level, while a step-rate excess plan has separate calculation formulas for earnings above and below the specified level.

Flat-benefit plan. An excess plan that expresses pensions as flat percentages of earnings, independent of length of service.

Integrated pension plan. A private pension plan that is explicitly coordinated with social security, either through the offset or excess approach. A common objective is to recognize employer costs for social security in setting private pension benefits. In addition, integrated private pension plans often provide greater benefits relative to preretirement earnings for the higher-paid workers.

Integration level (breakpoint). The level above and below which excess plans apply different percent-of-earnings formulas. The integration level may be the "social security taxable wage base" or a specified dollar amount, usually the taxable wage base at the time the excess formula was developed.

Normal retirement. Retirement at the earliest age specified in a pension plan for retirement with all accrued pension benefits by virtue of earnings and service, without reduction due to age.

Offset plan. An integrated pension plan that reduces private benefits by a portion of an employee's social security benefit.

Old-Age, Survivors, and Disability Insurance (OASDI). The old-age insurance program established by the Social Security Act, referred to as "social security" in text.

Replacement rate. Retirement annuity as a percent of earnings in the final year of work.

Taxable wage base. The maximum wage or salary subject to payroll taxation for social security purposes. The wage base was \$29,700 in 1981, the year covered by this study.

Terminal (final) earnings formula. A formula that bases pension benefits on average earnings in the final years of credited service—often the last 3 or 5 years.

Unit benefit plan. An excess plan that expresses pensions as percentages of earnings per year of service.

Earnings in last year of work	\$20,000	\$30,000
(1) "High-five" average earnings	17,119	25,683
(2) Private pensions, before offset		
(1) × .015 × 30	7,704	11,557
Replacement rate	38.5	38.5
(3) Social security benefit	7,884	8,124
Replacement rate	39.4	27.1
(4) Private pension, after offset		
(2) - ½ of (3)	3,762	7,495
Replacement rate	18.8	25.0
(5) Offset pension plus social security		
(4) + (3)	11,646	15,619
Replacement rate	58.2	52.1

Prior to calculation of the social security offset, private pensions replace 38.5 percent of preretirement earnings for both the \$20,000 and the \$30,000 worker (2). However, after deducting half the social security benefit paid to these workers, the \$30,000 worker receives a greater private pension proportionate to preretirement earnings than does the \$20,000 worker (4). But the replacement rate for combined social security and offset private benefits is higher for the \$20,000 worker; this stems from the social security benefit formula, which yields a higher replacement rate for the \$20,000 worker, (3) and (5).

Offset plans use a variety of approaches to determine the social security deduction. (See table 1.) One-fourth of the offset plans in the 1981 study specified deductions independent of an employee's length of service: they generally

called for flat percentage deductions, averaging 60 percent of primary social security benefits. However, a majority of the offset plans (three-fourths) specified a percentage deduction which varied with length of service. These percentage offsets ranged from 0.75 percent to 5 percent per year of service, but the effect of this formula was usually limited by either a ceiling on the size of the offset (usually 50 percent) or a curb on the years of service included in the calculation (typically 25 to 40 years). In cases where deductions varied by length of service, offsets for retirements after 30 years of service averaged 49 percent of the primary social security benefit in capped plans; this was higher than the 33-percent average found in plans without a ceiling on the maximum offset.⁷ (It is possible that uncapped formulas include lower percent-per-year offsets in recognition of their potential impact on long-service employees retiring after 35 years or more on the job.) In all cases, the amount of the offset is fixed at the time of retirement and subsequent changes in social security benefits, either legislated or cost-of-living adjustments, do not affect private pension payments.

Excess plans

Two-fifths of the integrated pension plans were excess plans. These plans contained percent-of-earnings benefit formulas which applied a higher percentage rate to earnings above a specified level (the breakpoint or integration level) than to those below. Excess plans achieve patterns of replacement rates relative to preretirement earnings similar to those under offset plans. This is illustrated in the following:

Two employees retired at the beginning of 1981 after 30 years of service, with earnings in 1980 of \$20,000 and \$30,000. Their pension plan provided benefits per year of service equal to 1 percent of career average annual earnings up to \$7,800, and 1.5 percent of earnings above this level. (The estimates of social security benefits were provided by the Social Security Administration; estimates of career average earnings are based on the Social Security Administration's assumed earnings histories.)

Earnings in last year of work	\$20,000	\$30,000
(1) Career average earnings	9,340	14,011
(2) Pension on earnings to \$7,800		
\$7,800 × .01 × 30	2,340	2,340
(3) Pension on excess earnings		
Earnings over		
\$7,800 × .015 × 30	693	2,795
(4) Total private pension		
(2) + (3)	3,033	5,135
Replacement rate	15.2	17.1
(5) Social security benefit	7,884	8,124
Replacement rate	39.4	27.1
(6) Pension plus social security		
(4) + (5)	10,917	13,259
Replacement rate	54.6	44.2

Table 1. Incidence of social security integration in defined benefit plans by type of formula, private pension plans in medium and large firms, 1981

Integration status	Pension benefits formula			
	All plans	Terminal earnings	Career earnings	Other ¹
Defined benefit plans:				
Number	914	510	151	253
Percent	100	100	100	100
Percent with integrated formula ² ..	57	81	60	6
Offset ³	34	56	7	6
Based on service	26	44	3	3
Not based on service	8	12	3	3
Flat percent	7	11	2	3
Dollar amount	1	1	1	—
Excess	23	25	54	—
Pure excess ⁴	1	1	1	—
Step-rate	22	24	53	—
Integrated at social security tax base breakpoint	12	15	20	—
Integrated at specified dollar breakpoint	10	9	33	—
Percent without integrated formula	43	19	40	94

¹Primarily plans providing stipulated dollar benefits per year of service or dollar schedules of benefits varying by length of service.

²Plans with integrated formulas may contain either minimum or alternative formulas which are not integrated with social security benefits, or both. In plans with two integrated formulas, the formula yielding the larger benefit was tabulated.

³Includes private pensions offset by railroad retirement benefits.

⁴All "pure" excess plans in this study integrated at a specified dollar breakpoint, rather than the social security taxable wage base.

NOTE: Because of rounding, sums of individual items may not equal totals. Dashes indicate no plans in the category.

Because the two workers had career average earnings exceeding the breakpoint, each obtained the same pension benefits at the 1-percent accrual rate (2). However, the \$30,000 worker, with greater earnings above \$7,800 received more benefits from the 1.5-percent rate (3) and, as a result, a higher overall private pension replacement rate (4). Nevertheless, as in the offset plan example, the replacement rate for *combined* social security and private benefits is higher for the \$20,000 worker than for the \$30,000 worker (6).

Excess plan formulas differ considerably in such areas as the integration level and the formula components. Some plans specify the "social security taxable wage base" as the integration level; others specify a dollar amount, typically the taxable wage base in effect at the time the pension formula was adopted. Excess plans commonly calculate benefits as a percentage of average annual earnings multiplied by years of service (unit-benefit plans); some, following Internal Revenue Service guidelines, calculate benefits as a flat percent of earnings of retirees with 15 years or more of service (flat-benefit plans).

A limited number of excess plans—1 percent of all the pension plans studied—calculated pension benefits only on earnings above specified dollar breakpoints (pure excess plans). The remainder contained separate pension calculation percentages for different earnings levels (step-rate plans).

Slightly more than half of the step-rate excess plans designated the "social security taxable wage base" as the integration level. Accordingly, they adjust automatically to changes in this base. Most of these plans specified either a career average of social security tax bases (68 plans) or the social security tax base in each year worked (28 plans). The remainder used the average social security tax base during the final 3 or 5 years of service. On average, step-rate excess plans integrating at the social security tax base provided benefits per year of service equal to 1.05 percent of earnings up to the tax base, and 1.64 percent of higher earnings—a spread of 0.59 percentage points.⁸

The remaining half of the step-rate excess plans integrated at a specific dollar figure. For the most part, these plans did not regularly adjust the integration level to match changes in the social security tax base. For example, one plan specified a \$6,600 breakpoint; it provided benefits equal to 1 percent of the first \$6,600 of career average annual earnings and 2 percent of higher earnings, multiplied by years of service. The breakpoint in this instance was the 1966 social security taxable wage base (\$6,600).

Among the step-rate excess plans citing dollar amounts as breakpoints, the specified earnings level ranged from \$3,000 to \$24,000 per year and averaged \$7,282. Benefits averaged 0.99 percent of earnings below the breakpoint and 1.65 percent above, a spread of 0.66 percentage points. This was slightly more than the 0.59 points under plans using a social security tax base integration level.⁹

Alternative formulas and minimum benefits

Integrated pension formulas may result in nominal private annuities for low-paid or short-service employees. Many of the pension plans studied contained provisions to counter this possibility. Two approaches were used. In the first, an integrated plan specified a minimum level of private benefits; in the second, a pension plan with an integrated formula also contained an alternative formula which was not integrated with social security. The retiree's private annuity is based on the formula which yields the higher benefit.

The following tabulation of the 521 integrated pension plans in the 1981 survey indicates the relative importance of plans with minimum benefit provisions and alternative, nonintegrated formulas. (Sums of individual items may not equal totals because some plans contained both minimum benefits and alternative formulas.)

	Offset plans	Excess plans	
		Pure	Step-rate
Number	310	7	204
Percent	100.0	100.0	100.0
With minimum benefits			
or alternative formulas ..	50.0	57.0	40.7
Minimum benefits	6.8	—	6.4
Alternative formulas ..	44.5	57.0	35.8
Without minimum benefits			
or alternative formulas ..	50.0	43.0	59.3

Relation of formulas and integration

Table 1 shows the overall extent to which private pension plans were integrated with social security. It also indicates a strong relationship between the benefit formula of a private pension plan and the incidence and form of integration. For example, integration was largely confined to private pension plans which calculated benefits as percentages of preretirement earnings. Integration provisions were found in three-fifths of the plans calculating pensions as a percentage of career earnings and in four-fifths of those using terminal-earnings formulas which base pensions on earnings in the last years of service.

Furthermore, terminal and career earnings plans use different approaches to integration. Career earnings plans typically used step-rate excess formulas, whereas the terminal earnings plans applied the offset approach in a majority of the cases.

The incidence of integration declined substantially among plans without career or terminal earnings formulas. Benefits were coordinated with social security in 6 percent of the 253 plans which did not have a percentage-of-earnings benefit formula; these plans mainly stipulated dollar benefits per year of service or dollar schedules of benefits varying by length of service.

Influence of collective bargaining. Collectively bargained pension plans tend to exclude integration provisions. Inte-

Table 2. Incidence of social security integration in defined benefit plans, by collective bargaining status, private pension plans in medium and large firms, 1981

Integration status	All plans		Union-management plans		Nonunion plans	
	Number	Percent	Number	Percent	Number	Percent
Total defined benefit plans	914	100	280	100	634	100
With integrated formula	521	57	41	15	480	76
Offset	310	34	25	9	285	45
Excess	211	23	16	6	195	31
Pure	7	1	—	—	7	1
Step-rate	204	22	16	6	188	30
Without integrated formula	108	12	8	3	100	16
Integrated at social security tax base breakpoint	96	10	8	3	88	14
Integrated at specified dollar breakpoint	96	10	8	3	88	14
Without integrated formula	393	43	239	85	154	24

NOTE: Because of rounding, sums of individual items may not equal totals. Dashes indicate no plans in the category.

grated formulas were found in 76 percent of the nonunion plans in the 1981 study, compared with 15 percent of the union-management plans. (See table 2.) This contrast helps explain the patterns shown in table 1. Career and terminal earnings formulas—which generally are integrated—typically are found in nonunion plans. On the other hand, bargained plans—which generally exclude integration provisions—most commonly contain dollar amount formulas.

The proportion of union-management plans in 1981 with integration formulas is markedly below that recorded in two earlier BLS analyses.¹⁰ A study of 300 pension plans under collective bargaining in late 1952 found offset provisions in 140 of the plans. A second study, of 300 bargained plans in effect in the fall of 1959, found integration provisions in 120 of the plans—79 integrated by the offset method and 43 by excess formulas (2 plans used both offset and excess formulas). Although differences in survey scope and method preclude precise comparison among the three studies, the data clearly indicate that integration is less common in union-management pension plans today than 30 years ago.

Integration provisions in early bargained plans—mainly offset formulas—partly mirrored union efforts to encourage employer support for expanded social security benefits.¹¹ More recently, union-management plans have tended to drop integration provisions as social security benefits improved.

Impact of Internal Revenue Service rules. Income tax considerations greatly affect the way private pension plans integrate with social security. Since passage of the Revenue Act of 1942, Federal tax breaks have been denied to pension plans which discriminate in favor of officers, shareholders, supervisory, or other highly paid employees with respect to coverage, benefits, or contributions. Integrated private plans can qualify for tax advantages as long as combined pension and social security replacement rates are no higher for employees earning more than the social security taxable wage

base than for lower earning individuals.

Internal Revenue Service rules take account of the variations in pension plan integration. Under current rules, an offset plan can reduce benefits up to 83⅓ percent of primary social security benefits payable at the time of retirement (the amount of the retiree's offset cannot be changed because of subsequent social security benefit adjustments). IRS rules with respect to step-rate excess plans prescribe maximum spreads between percentages applicable to earnings above and to those below the integration level.¹²

Integration formulas and replacement rates

The wide variety of integration formulas in pension plans makes it difficult to summarize their effects on retirement income. A common approach focuses on a limited number of hypothetical offset and excess plans drawn up to illustrate typical integration formulas; pensions are calculated for workers at different earnings levels retiring under each of these plans.

An alternative approach is to calculate benefits for a representative sample of actual pension plans. This alternative approach is possible here because of the availability of the detailed provisions of individual pension plans. Subsamples were taken of the integrated pension plans found in the 1981 BLS study of employee benefit plans—to obtain reasonable balance, every fifth offset plan and every third step-rate excess plan was selected. For each of these plans, pension benefits were calculated for two workers retiring at the beginning of 1981 after 30 years of service, and with final earnings of \$20,000 and \$30,000.

Considering the small samples (54 offset and 66 step-rate excess plans), it is not possible to present useful information on levels of pension benefits. However, the pattern of replacement rates by earnings level is instructive. (See table 3.) Both under the offset and excess plans analyzed, the higher paid employee, on average, received a greater private

Table 3. Average replacement rates for employees retiring in 1981 after 30 years of service under a sample of integrated private pension plans in medium and large firms

Benefit ¹	Earnings in 1980	
	\$20,000	\$30,000
Offset plans:		
Private pension benefit	25.9	30.0
Private pension plus social security	65.3	57.0
Excess plans, step rate:		
Integrated at dollar breakpoint:		
Private pension benefit	24.5	26.3
Private pension plus social security	63.9	53.4
Integrated at social security tax base:		
Private pension benefit	27.2	28.3
Private pension plus social security	66.5	55.3

¹Benefits resulting from integration were calculated for a random sample of one-fifth of the offset plans found in the 1981 BLS survey of employee benefit plans and one-third of the step-rate excess plans. These ratios were selected to obtain a reasonable balance between the two types of plans, considering the resources available for this analysis. Social security benefits included in the calculations are those shown in the text table on page 17.

pension as a percent of preretirement earnings. Nevertheless, in all three cases in table 3, this result was more than countered by the effects of the social security benefit formula. On average, combined replacement rates for \$20,000 workers were 8 percentage points or more higher than for \$30,000 workers.¹³

Provisions for early retirement

Our analysis is primarily concerned with integration of social security and private benefits for workers retiring at their pension plans' normal retirement age (most commonly, age 65). However, nearly all (98 percent) of the participants in the private pension plans covered by the 1981 survey could retire early with reduced benefits (typically under age

62, the earliest age for receipt of social security pensions).¹⁴

One-fifth of the offset plans directly reduced the effect of the offset for early retirees. A group of 33 plans delayed imposition of the social security offset for early retirees until age 62 or—occasionally—age 65. In effect, those plans provided a supplemental pension until commencement of social security benefits. An additional 30 plans did not delay the offset for early retirees, but lessened its size permanently.

The remaining offset plans did not contain such provisions. Their benefits were calculated using the normal retirement formula, then were reduced by the prescribed offset formula using a projected social security benefit for retirement at age 65, and then were reduced again for early receipt of benefits.¹⁵ □

—FOOTNOTES—

¹An additional 10 percent of the full-time workers in the private sector were employed by firms with retirement plans, but were excluded from participation primarily because they failed to meet age or service eligibility requirements or both. See *Patterns of Worker Coverage by Private Pension Plans* (U.S. Department of Labor, Labor-Management Services Administration, Pension and Welfare Benefit Programs, 1980), pp. iii, v. This report is based on data collected in the Current Population Survey, conducted by the Bureau of the Census.

²The concepts of implicit and explicit coordination of private and public benefits are developed in Dan M. McGill, *Fundamentals of Private Pensions*, 4th ed. (Homewood, Ill., Richard D. Irwin, Inc., 1979), p. 177.

³In 1981, both workers and employers paid a 6.65-percent levy (5.35 percent for social security and 1.3 percent for health insurance) on the first \$29,700 of covered earnings (the taxable wage base). Some analysts contend that part of the employer payroll tax may be shifted back onto workers in the form of reduced wages. See Daniel S. Hamermesh, "New Estimates of the Incidence of the Payroll Tax," *Southern Economic Journal*, April 1979, pp. 1208–19.

⁴For an analysis of these issues, together with a review of recent proposals for changes in regulations governing pension plan integration, see James H. Schulz and Thomas D. Leavitt, *Pension Integration: Concepts, Issues and Proposals* (Washington, Employee Benefit Research Institute, 1983), pp. 37–65.

⁵These surveys are conducted in private sector establishments in the United States, excluding Alaska and Hawaii, employing at least 50, 100, or 250 workers, depending on the industry. Industry coverage includes: mining; construction; manufacturing; transportation, communications, electric, gas, and sanitary services; wholesale trade; retail trade; finance, insurance, and real estate; and selected services. The sample selected for the 1981 survey included 1,505 establishments, designed to provide representative data for the 21.5 million employees in 43,325 establishments within the scope of the study. Major findings of the 1981 survey are reported in *Employee Benefits in Medium and Large Firms, 1981*, Bulletin 2140 (Bureau of Labor Statistics, 1982). For additional information on the survey, see Robert Frumkin and William Wiatrowski, "Bureau of Labor Statistics takes a new look at employee benefits," *Monthly Labor Review*, August 1982, pp. 41–45.

⁶For more detailed illustrations of the effects of offset formulas on replacement rates, see Ray Schmitt, *Integrated Pension Plans: An Analysis of Earnings Replacement* (Washington, Congressional Research Service, The Library of Congress, 1981).

⁷Typically, plans specified a percent-per-year-of-service offset, either uncapped or with a maximum offset. Eight of the plans, however, contained a flat percentage offset—commonly 50 percent—but reduced it for each year of service less than a specified number—often 30 years. The effect was a capped offset varying with length of service.

⁸When considering these averages, keep in mind that they were computed for a group of plans employing both different definitions of the

integration level and a variety of pension calculation formulas—for example, percent of career average annual earnings, percent of earnings in each year worked, and percent of annual earnings in the highest 3 or 5 earnings years. The percentage adopted in a given plan is likely to be influenced by the type of benefit formula selected. A more intensive analysis than is possible here would provide separate averages and spreads for each type of pension formula. Furthermore, in calculating averages, flat percent benefit formulas were prorated to obtain percent-per-year benefits.

⁹Data in this article are influenced by the restriction of the Bureau's employee benefits plan survey to medium and large firms. It is likely that a greater percentage of smaller plans are integrated than larger plans. In particular, the limited incidence of pure excess plans indicated by table 1 may stem from the survey's exclusion of small plans. On the other hand, defined benefit plans are more frequently integrated than defined contribution plans, which were excluded from this analysis. For a review of earlier studies of integration practices, see Schulz and Leavitt, *Pension Integration*, pp. 24–35.

¹⁰*Pension Plans Under Collective Bargaining*, Bulletin 1147 (Bureau of Labor Statistics, 1953), p. 20; *Pension Plans Under Collective Bargaining*, Bulletin 1284 (Bureau of Labor Statistics, 1961), p. 7.

¹¹See Harry Becker, "Labor's Approach to the Retirement Problem," in *Proceedings of Second Annual Meeting, New York City, December 29–30, 1949* (Champaign, Ill., Industrial Relations Research Association, 1950), pp. 124–25; and Burton A. Zorn, "Bargaining Over Pensions," in Emanuel Stein, ed., *Proceedings of New York University Third Annual Conference on Labor* (Albany, N.Y., Matthew Bender & Co., 1950), p. 104.

¹²For a detailed treatment of IRS rules, see McGill, *Fundamentals of Private Pensions*, pp. 177–200. The Tax Equity and Fiscal Responsibility Act of 1982 contained provisions affecting integration. For defined contribution plans, effective in 1984, the maximum spread between contribution rates above and below the taxable base may not exceed the social security tax rate levied on employers. Tax Equity and Fiscal Responsibility Act restrictions also apply to "top-heavy" plans—those providing more than a specified percentage of total benefits to "key" employees; beginning in 1984, these plans must provide minimum nonintegrated benefits or contributions for nonkey employees. See Schulz and Leavitt, *Pension Integration*, pp. 60–61.

¹³An interesting question concerns the extent to which designers of integrated pension plans adopt the maximum percentage spreads and offsets allowed by Internal Revenue Service rules. The complexity, both of the rules and the pension formulas, prevented analysis of this point with the resources available for this study.

¹⁴*Employee Benefits in Medium and Large Firms*, p. 33.

¹⁵Nonintegrated pension plans may include supplementary benefits for workers retiring early and not yet eligible for social security pensions. A Bureau analysis of these supplementary benefits is currently in progress.