

# Have Life Insurance Benefits Kept Pace with Wages?

Over the last two decades, life insurance protection for beneficiaries of employees has generally kept up with employee earnings, either through automatic adjustments or periodic increases in face value.

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Employer-provided life insurance protects the families of employees from the financial consequences of the death of the employee. Since the founding of the first group plans in the years immediately before World War I,<sup>1</sup> life insurance has become one of the standard components of the employee benefits package. By 1994-97, 74 percent of full-time employees in the private sector and 87 percent in State and local governments had coverage paid in whole or in part by their employer. Of these employees, five-sixths had their coverage paid for entirely by their employer.<sup>2</sup> Although prominent, life insurance is typically a relatively inexpensive element of employee compensation: over the last decade, employer contributions for life insurance have hovered between 4 and 5 cents per hour worked by employees, accounting for 0.2 to 0.3 percent of employee compensation costs.<sup>3</sup>

Despite their comparatively low share of total compensation costs, life insurance plans serve an important role in replacing the income of the families of deceased employees.<sup>4</sup> Given the objective of income replacement, this article looks at one particular aspect of

life insurance plans: *Has the face value of employee coverage kept up with changes in wages and salaries over the past two decades?* The data to answer this question come largely from the Bureau's Employee Benefits Survey (EBS), which, since 1979, has provided annual measures of the incidence and characteristics of employee benefit plans in the United States. For life insurance trends, the article focuses mainly on information from the surveys conducted in medium and large (100 or more employees) private establishments, because these surveys date back to 1979. Survey data on small private establishments (fewer than 100 employees) and State and local governments are available for only the last decade.<sup>5</sup>

## How life insurance benefits are calculated

This article focuses on the face amount of life insurance policies, that is, the amount of money payable to the beneficiaries designated by the employee. There are two primary methods for calculating the face amount of life insurance. First, amounts may be directly tied to the employee's salary by multiplying the salary by a designated

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factor (such as 1 times earnings, or 2 times earnings). These are known as multiple-of-earnings plans. Second, a “flat” amount, such as \$20,000, may be paid to all employees regardless of salary.<sup>6</sup>

In medium and large private establishments, the most common method of calculating life insurance benefits has been to base the face amount on earnings. From 1979 through 1997, about 3 in 5 life insurance participants in such establishments were covered by plans based upon earnings, with nearly all of the remainder in plans

specifying a flat dollar amount. (See table 1.<sup>7</sup>) The opposite situation prevailed in small private establishments and State and local governments, in which about 3 in 5 participants had a flat amount of insurance and 2 in 5 had an amount tied to their salary. (See tables 2 and 3.) (Readers should note that small year-to-year changes in these figures are generally not statistically significant.<sup>8</sup>) Over the entire survey period, the relative incidence of these two major ways of calculating life insurance changed little. The only noteworthy change was the replacement of

graduated schedules of earnings with multiple-of-earnings formulas in medium and large private establishments.<sup>9</sup>

Within the private sector, there were sharp differences among the occupations studied in how life insurance protection was determined. In medium and large private establishments in 1997, 7 in 10 white-collar participants had coverage linked to earnings, while 2 in 10 had flat dollar coverage. For blue-collar and service workers, the pattern was reversed: 52 percent had flat-amount coverage and 39 percent had coverage based on earnings. Similarly, in small private establishments in 1996, white-collar participants were more likely to be in earnings-based plans (43 percent) than were blue-collar and service workers (23 percent). Such pronounced occupational differences were not observed, however, among State and local governments.<sup>10</sup>

### How life insurance benefits relate to earnings

When amounts are based directly upon earnings, plans automatically adjust to salary increases (or decreases). Flat-amount plans, in contrast, do not automatically follow changes in salaries, but instead must be adjusted through administrative action.

**Plans based on earnings.** Over the last two decades, the primary method for tying life insurance amounts to earnings has been to provide coverage for 1 times earnings. In 1997, a majority of life insurance participants with earnings-based coverage in medium and large establishments had face amounts equal to their earnings, often rounded up to the next highest \$1,000 or determined using a similar rounding technique. Throughout this period, the second most common multiplier was 2 times earnings. From 1979 to 1997, there was a small increase in the proportion of workers in plans with 1-times-earnings multipliers, accompanied by a corresponding decrease in the incidence of 2-times-earnings plans. (See table 4.) In 1991 and 1997, however, the overall average multiple remained

**TABLE 1. Method of determining basic life insurance coverage, percent of full-time participants, medium and large private establishments, selected years, 1979-97**

Benefit formula	1979	1985	1991	1997
Total with life insurance .....	100	100	100	100
Based on earnings .....	63	66	61	63
Multiple of earnings .....	39	53	54	57
Graduated schedule of earnings .....	24	13	7	5
Flat dollar amount .....	34	31	37	36
Other .....	3	3	1	2

NOTE: Because of rounding, sums of individual items may not equal totals. Figures for 1991 were adjusted to reflect pro-

portions of full-time workers with life insurance coverage.

**TABLE 2. Method of determining basic life insurance coverage, percent of full-time participants, small private establishments, selected years, 1990-96**

Benefit formula	1990	1992	1994	1996
Total with life insurance .....	100	100	100	100
Based on earnings .....	37	37	32	34
Multiple of earnings .....	34	34	31	34
Graduated schedule of earnings .....	3	3	( <sup>1</sup> )	( <sup>1</sup> )
Flat dollar amount .....	63	62	67	62
Other .....	( <sup>1</sup> )	1	1	3

<sup>1</sup>Less than 0.5 percent.

NOTE: Because of rounding, sums of individual items may not equal totals. Fig-

ures for 1990 and 1992 were adjusted to reflect proportions of full-time workers with life insurance coverage.

**TABLE 3. Method of determining basic life insurance coverage, percent of full-time participants, State and local governments, selected years, 1987-98**

Benefit formula	1987	1990	1992	1994	1998
Total with life insurance .....	100	100	100	100	100
Based on earnings .....	45	39	40	40	40
Multiple of earnings .....	42	37	38	37	36
Graduated schedule of earnings .....	3	3	2	2	4
Flat dollar amount .....	53	61	59	58	55
Other .....	1	( <sup>1</sup> )	1	2	5

<sup>1</sup>Less than 0.5 percent.

NOTE: Because of rounding, sums of individual items may not equal totals. Fig-

ures for 1990 and 1992 were adjusted to reflect proportions of full-time workers with life insurance coverage.

at 1.5 times earnings.<sup>11</sup> This suggests that, for workers covered by multiple-of-earnings plans, coverage has largely kept pace with changes in earnings.

Very similar patterns prevailed in small private establishments in the decade of the 1990s. (See table 5.) The average multiple of earnings declined slightly, from 1.6 in 1990 to 1.4 in 1996. Coverage patterns were essentially un-

changed in State and local governments from 1987 to 1998. (See table 6.) Despite year-to-year fluctuations, the overall average salary multiple for government employees remained relatively steady at 1.5 in 1987 and 1.6 in 1998. This suggests that face amounts kept pace with earnings for government workers.

One factor to consider in examining

earnings-based plans is the existence of maximum limits, or ceilings, on coverage. Such limits are common, particularly in the private sector. In the most recent surveys, such ceilings applied to about 6 in 10 workers with life insurance tied to earnings in the private sector, but to only 3 in 10 such government workers. Maximum limits changed little overall for private sector workers in the years covered by the Employee Benefits Survey. Among medium and large firms, the proportion of participants in multiple-of-earnings plans subject to ceilings rose from 52 percent in 1985 to 60 percent in 1997, but these ceilings became less common in smaller establishments, with their incidence among participants declining from 65 percent in 1990 to 59 percent in 1996. Similarly, the incidence of such ceilings declined slightly in State and local governments, with 37 percent of participants subject to ceilings in 1987 and 31 percent in 1994.<sup>12</sup>

Of course, for those workers in plans that did not specify a ceiling, coverage is not limited. But even for workers with such limits, average ceilings in recent years have been quite high relative to wage rates. (See table 7.<sup>13</sup>) Ceilings averaged about \$250,000 in State and local governments in 1994 and in small private establishments in 1996. Such ceilings averaged over \$400,000 in medium and large private establishments in 1997, up from \$318,000 in 1995 and \$263,000 in 1993.<sup>14</sup> On the other hand, the proportion of workers in medium and large firms with ceilings below \$100,000 increased from 10 percent in 1985 to 18 percent in 1997, while the proportion with ceilings of \$100,000 or more held steady at just over 40 percent.<sup>15</sup>

It is difficult to gauge the role that ceilings have played in limiting face coverage by looking only at these summary tabulations. In the early 1990s, however, the Employee Benefit Survey tables compared maximum ceilings in each plan with the amount of the earnings multiples. These data are summarized in table 8. In the 1991-92 studies of private firms, employees with multiples of twice earnings or more tended

**TABLE 4. Multiple-of-earnings life insurance benefit formulas, percent of full-time participants with multiple-of-earnings life insurance benefits, medium and large private establishments, selected years, 1979-97**

Multiple-of-earnings benefit formulas	1979	1985	1991	1997
Total with multiple of earnings .....	100	100	100	100
Less than 1.0 .....	3	2	3	5
1.0 .....	44	45	52	53
1.1-1.9 .....	11	10	12	11
2.0 .....	34	33	25	22
Greater than 2.0 .....	8	7	9	8
Other formulas .....	—	3	( <sup>1</sup> )	1
Average multiple .....			1.5	1.5

<sup>1</sup>Less than 0.5 percent.

NOTE: Because of rounding, sums of individual items may not equal totals. Dash

indicates no employees in this category. Average multiples were not calculated for 1979 and 1985.

**TABLE 5. Multiple-of-earnings life insurance benefit formulas, percent of full-time participants with multiple-of-earnings life insurance benefits, small private establishments, selected years, 1990-96**

Multiple-of-earnings benefit formulas	1990	1992	1994	1996
Total with multiple of earnings .....	100	100	100	100
Less than 1.0 .....	2	1	3	3
1.0 .....	48	47	49	53
1.1-1.9 .....	8	11	11	16
2.0 .....	30	31	27	21
Greater than 2.0 .....	11	9	9	6
Other formulas .....	1	1	1	1
Average multiple .....	1.6	1.5	1.5	1.4

**TABLE 6. Multiple-of-earnings life insurance benefit formulas, percent of full-time participants with multiple-of-earnings life insurance benefits, State and local governments, selected years, 1987-98**

Multiple-of-earnings benefit formulas	1987	1990	1992	1994	1998
Total with multiple of earnings .....	100	100	100	100	100
Less than 1.0 .....	4	1	1	1	1
1.0 .....	44	45	40	37	42
1.1-1.9 .....	15	16	15	16	15
2.0 .....	29	19	21	15	20
Greater than 2.0 .....	7	19	22	23	11
Other formulas .....	—	1	( <sup>1</sup> )	6	12
Average multiple .....	1.5	1.7	1.8	1.9	1.6

<sup>1</sup>Less than 0.5 percent.

NOTE: Because of rounding, sums of individual items may not equal totals. Dash

indicates no employees in this category. The average multiple for 1987 was calculated from published data.

**TABLE 7. Maximum benefit provisions, percent of full-time participants with multiple-of-earnings life insurance formulas, selected years, 1994-97**

Maximum provision	Medium and large establishments, 1997	Small establishments, 1996	State and local governments, 1994
Total with multiple-of-earnings formula .....	100	100	100
No maximum benefit amount .....	36	28	65
With maximum benefit amount .....	60	59	31
Less than \$50,000 .....	2	1	1
\$50,000-\$99,999 .....	16	20	13
\$100,000 .....	6	11	1
Over \$100,000 and less than \$500,000 ..	22	18	9
\$500,000 and over .....	14	8	6
Not determinable .....	3	13	3
Average maximum benefit .....	\$441,000	\$238,000	\$256,000

NOTE: Because of rounding, sums of individual items may not equal totals. These data were not published in the 1998 government survey.

**TABLE 8. Relationship of life insurance coverage ceilings and earnings multipliers, percent of participants, 1991-92**

Multiple-of-earnings benefits formula	Medium and large private establishments, 1991		Small private establishments, 1992		State and local governments, 1992	
	Coverage ceiling					
Multiplier	Less than \$250,000	\$250,000 or more	Less than \$250,000	\$250,000 or more	Less than \$250,000	\$250,000 or more
Less than 2.0 .....	22	15	26	8	18	2
2.0 or more .....	6	11	11	20	11	5

to have higher ceilings than did employees with multiples less than twice earnings.<sup>16</sup> A similar, though less pronounced, pattern emerged from the 1992 study of State and local governments.<sup>17</sup> Thus, although ceilings do limit benefits, coverage limits tend to be higher in plans with more generous benefits.

**Plans based on flat amounts.** The second most common method of calculating life insurance coverage is to provide the same face amount to all participants regardless of salary. Because these plans are not linked to salary, they do not automatically adjust to changes in workers' earnings. Employers do, however, revise flat-amount coverage periodically, either through their own administrative decisions or as a result of collective bargaining. Once again, the Employee Benefits Survey (EBS) provides data that are helpful in answer-

ing the question: Have flat-amount life insurance plans kept up with changes in earnings?

How have earnings changed during the last two decades? The Employment Cost Index (ECI), a component of the National Compensation Survey, measures the quarterly change in employer costs for wages and employee benefits.<sup>18</sup> Since 1990, the ECI and the EBS have used the same establishment and worker sample and have adopted the same data collection concepts, definitions, and procedures. The ECI is therefore a good yardstick for measuring wages in light of changes in life insurance plans. During the years for which EBS data can be used to track developments in life insurance plans in medium and large establishments (1979-97), private industry wages and salaries rose 123 percent.<sup>19</sup> Wages increased 109 percent for blue-collar workers and 110 percent for service workers, the two

occupational groups for which flat-amount life insurance plans are predominant. During the shorter time span covered by the EBS small establishments survey, 1990-96, wages rose 19 percent for blue-collar workers and 18 percent for service workers. State and local government workers as a whole saw their wages increase by 48 percent over the 1987-98 period covered by EBS surveys. (As noted earlier, there were not marked differences in methods of determining life insurance among occupational groups in governments.)

The EBS data show that flat-amount coverage has increased over the years in both the private and State and local government sectors. Key findings are summarized in chart 1. For medium and large firms, table 9 highlights key data on flat-amount plans from 1979 to 1997 in four evenly spaced intervals. There is clearly a movement towards providing more generous benefits over the years. This trend is reflected in the average amounts of flat-amount insurance provided to blue-collar and service workers, which rose from \$10,000 in 1985 to \$15,100 in 1997, a 51-percent increase.<sup>20</sup> During the same 12-year period, private sector wages rose by 43 percent for blue-collar workers and 44 percent for service workers.

This trend of increasing benefits in line with wage increases also was evident in small private establishments. As table 10 shows, there was a decline in the proportion of workers in plans with benefits of less than \$10,000, and an increase in the proportion in plans with benefits of \$20,000 and over from 1990 to 1996. Average benefits rose 20 percent over the period—in tandem with the rise in wages for blue-collar and service workers.

State and local government workers experienced increases in their flat-amount coverage similar to those of their counterparts in private firms. (See table 11.) There was a decrease in the proportion of workers with coverage of less than \$10,000, and an increase in the proportion of those with coverage of \$20,000 and greater. This is borne out by the averages calculated for each year, which rose 69 percent from 1987

**TABLE 9. Life insurance benefits, percent of blue-collar and service participants with flat-amount coverage, medium and large private establishments, selected years, 1979-97**

Flat amount	1979	1985	1991	1997
Total with flat amount .....	100	100	100	100
Less than \$5,000 .....	29	14	5	3
\$5,000-\$9,999 .....	34	35	33	18
\$10,000-\$19,999 .....	36	43	42	41
\$20,000 and over .....	1	9	20	22
Other formulas .....	—	—	—	15
Average amount .....		\$10,000	\$13,000	\$15,100

NOTE: Because of rounding, sums of individual items may not equal totals. Dash indicates no employees in this category. Average flat amounts were not published for 1979.

**TABLE 10. Life insurance benefits, percent of blue-collar and service participants with flat-amount coverage, small private establishments, selected years 1990-96**

Flat amount	1990	1992	1994	1996
Total with flat amount .....	100	100	100	100
Less than \$5,000 .....	6	6	6	4
\$5,000-\$9,999 .....	17	16	10	13
\$10,000-\$19,999 .....	66	57	60	59
\$20,000 and over .....	12	21	22	21
Other formulas .....	—	—	2	3
Average amount .....	\$11,700	\$12,900	\$13,700	\$14,000

NOTE: Because of rounding, sums of individual items may not equal totals. Dash indicates no employees in this category.

**TABLE 11. Life insurance benefits, percent of all participants with flat-amount coverage, State and local governments, selected years, 1987-98**

Flat amount	1987	1990	1992	1994	1998
Total with flat amount .....	100	100	100	100	100
Less than \$5,000 .....	18	10	13	7	9
\$5,000-\$9,999 .....	29	24	21	20	15
\$10,000-\$19,999 .....	33	42	34	34	33
\$20,000 and over .....	21	25	33	35	39
Other formulas .....	—	—	—	4	3
Average amount .....	\$11,200	\$13,700	\$15,800	\$17,500	\$18,900

NOTE: Because of rounding, sums of individual items may not equal totals. Dash indicates no employees in this category. The average flat amounts for 1987 and 1990 were calculated from published data.

to 1998. In contrast, government workers' wages increased only 48 percent over these 11 years.

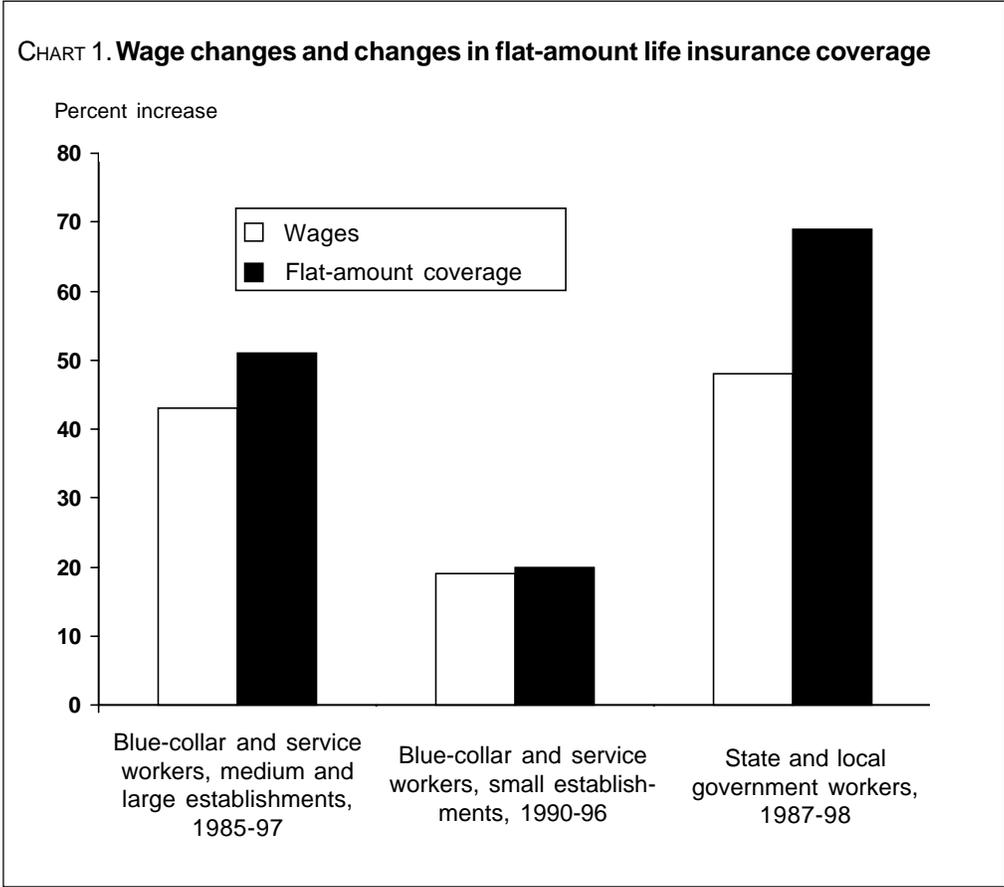
**Conclusion and a look to the future**

Overall, then, the face value of life insurance plans generally kept pace with changes in wages, thus preserving the protection of income over time. For nearly half the workers, this change was automatic, because their coverage was tied directly to their wages. But even for workers participating in flat-amount insurance plans, face values generally increased along with wages over the years.

The ability to track trends in benefit

plans will improve over the next few years as a result of BLS efforts to meld its compensation surveys into a single, unified program. This life insurance study has been hampered by the lack of data for all sectors of the economy in any given year, and the inability to examine the relationship among components of the compensation package. For example, it would be interesting to compare flat-amount life insurance benefits to the actual wage rates of the employees participating in flat-amount plans. How did wage rates change over time for workers with flat-amount benefits compared to workers with multiple-of-earnings benefits? Data limitations prevent us from answering these questions currently.

The new unified compensation survey program, called the National Compensation Survey, will enjoy several advantages over the old Employee Benefits Survey. First, all sectors of the economy will be surveyed annually, making it easier to track trends. Second, data on wage rates, benefit plan participation, and benefit plan provisions will be linked on a unified database. Although wage rates and benefit plan coverage will not be linked for individual workers, they will be linked occupation by occupation within establishments. Beginning later this year, results from this improved program of compensation statistics will become available in stages over the next 3 years.<sup>21</sup>



<sup>1</sup> For the history of employer-sponsored life insurance in the United States, see Michael Bucci, "Growth of employer-sponsored group life insurance," *Monthly Labor Review*, October 1991, reprinted in *Employee Benefits Survey: A BLS Reader*, Bulletin 2459 (Bureau of Labor Statistics, February 1995), pp. 230-37.

<sup>2</sup> Data are from *Compensation and Working Conditions*, Winter 1999, pp. 54-55, tables B-1 and B-3.

<sup>3</sup> See *Employer Costs for Employee Compensation, 1986-99*, Bulletin 2526 (Bureau of Labor Statistics, March 2000).

<sup>4</sup> For a discussion of life insurance plan design, see William H. Rabel and Jerry S. Rosenbloom, "Group Life Insurance: Term and Permanent," in *The Handbook of Employee Benefits: Design, Funding, and Administration*, 4th ed. (New York, McGraw-Hill, 1996), pp. 329-53.

<sup>5</sup> Data for medium and large private establishments are available for the years 1979-86, 1988-89, 1991, 1993, 1995, and 1997. Data for small private establishments are available for the years 1990, 1992, 1994, and 1996, but not for 1998. Data for State and local governments are available for the years 1987, 1990, 1992, and 1994, but not for 1996; a 1998 government survey will be published later this year.

<sup>6</sup> Other methods, such as providing graduated schedules of coverage based upon years of service or salary ranges, have covered a very small proportion of employees in recent years and will not be discussed in this article.

<sup>7</sup> Unless indicated otherwise, all figures relate to full-time employees. In some cases, published data have been reclassified to ensure consistent classification of plan provisions across years.

<sup>8</sup> Readers should also be aware that survey establishment coverage has expanded over the years, which could affect trends in the data. The 1987 government survey did not include establishments with fewer than 50 workers. While it is unlikely that the inclusion of smaller government establishments in the 1990, 1992, 1994, and 1998 surveys would materially impact the trends cited in this article, the effect of this change in scope is unknown. Similarly, in 1988, the medium and large private establishments survey expanded to include establishments with 100 or more employees in all private industries. (Previous surveys had limited coverage of services industries, and included only establishments with 250 or more em-

ployees in selected other industries.) This survey expansion appeared to have little effect on the proportions of workers with the various types of life insurance formulas. (See *Employee Benefits in Medium and Large Private Firms, 1988*, Bulletin 2336 (Bureau of Labor Statistics, August 1989), tables 62 and 188.) However, the impact of this expansion on the other details of life insurance plans discussed in this article is unknown. For more information on survey scope changes, see Allan P. Blostin, "An Overview of the EBS and the NCS," *Compensation and Working Conditions*, Spring 1999, pp. 2-5.

<sup>9</sup> Graduated schedules based upon earnings provide designated levels of coverage at specified earnings intervals, rather than coverage calculated as a direct multiple of earnings. For example, an earnings schedule might call for \$15,000 of coverage for workers with earnings of less than \$20,000; \$16,000 for workers with earnings of \$20,000 to \$24,999; \$17,000 for workers with earnings of \$25,000 to \$29,999; and so on, with the schedule topping out at \$22,000 of coverage for workers with earnings of \$50,000 or more.

<sup>10</sup> See *Employee Benefits in Medium and Large Private Establishments, 1997*, Bulletin 2517 (Bureau of Labor Statistics, September 1999), p. 95; *Employee Benefits in Small Private Establishments, 1996*, Bulletin 2507 (Bureau of Labor Statistics, April 1999), p. 61; and *Employee Benefits in State and Local Governments, 1994*, Bulletin 2477 (Bureau of Labor Statistics, May 1996), p. 100.

<sup>11</sup> The average multiple was 1.5 in 1988 and 1989, and 1.4 in 1993 and 1995. See *Employee Benefits in Medium and Large Private Firms, 1988*, p. 43; *Employee Benefits in Medium and Large Firms, 1989*, Bulletin 2363 (Bureau of Labor Statistics, June 1990), p. 46; *Employee Benefits in Medium and Large Private Establishments, 1993*, Bulletin 2456 (Bureau of Labor Statistics, December 1994), p. 104; and *Employee Benefits in Medium and Large Private Establishments, 1995*, Bulletin 2496 (Bureau of Labor Statistics, April 1998), p. 96.

<sup>12</sup> See *Employee Benefits in Medium and Large Firms, 1985*, Bulletin 2262 (Bureau of Labor Statistics, July 1986), pp. 46-47; *Employee Benefits in Medium and Large Private Establishments, 1997*, p. 97; *Employee Benefits in Small Private Establishments, 1990*, Bulletin 2388 (Bu-

reau of Labor Statistics, September 1991), pp. 65-66; *Employee Benefits in Small Private Establishments, 1996*, p. 64; *Employee Benefits in State and Local Governments, 1987*, Bulletin 2309 (Bureau of Labor Statistics, May 1988), p. 51; and *Employee Benefits in State and Local Governments, 1994*, p. 103. Data on maximum benefits will not be published for the 1998 government survey.

<sup>13</sup> In 1997, full-time workers averaged \$15.77 per hour, or about \$32,500 per year, assuming a 52-week work schedule. (*National Compensation Survey: Occupational Wages in the United States, 1997*, Bulletin 2519 (Bureau of Labor Statistics, September 1999), p. 7.)

<sup>14</sup> Information on average ceilings was not calculated prior to 1993.

<sup>15</sup> See *Employee Benefits in Medium and Large Firms, 1985*, pp. 46-47, for 1985 data.

<sup>16</sup> See *Employee Benefits in Medium and Large Private Establishments, 1991*, Bulletin 2422 (Bureau of Labor Statistics, May 1993), pp. 74-75; and *Employee Benefits in Small Private Establishments, 1992*, Bulletin 2441 (Bureau of Labor Statistics, May 1994), pp. 68-69.

<sup>17</sup> See *Employee Benefits in State and Local Governments, 1992*, Bulletin 2444 (Bureau of Labor Statistics, July 1994), pp. 69-70.

<sup>18</sup> For more information on the Employment Cost Index, see *Employment Cost Indexes, 1975-98*, Bulletin 2514 (Bureau of Labor Statistics, August 1999).

<sup>19</sup> ECI data are not available by size of establishment. All ECI data are cited as of the quarter ending in March of each year.

<sup>20</sup> Average flat amounts were calculated from survey microdata only for 1985 and later years. The average can be estimated from the published distribution, using a procedure that yields results that are, on average, within 2 percent of the calculated averages for 1985-86, 1988-89, 1991, 1993, 1995, and 1997. Using this procedure, we estimate the average for 1979 to be about \$8,200. If this estimate is accurate, the average flat amount for blue-collar and service workers increased by 84 percent from 1979 to 1997, slightly slower than the 109- to 110-percent growth in wages during the same period.

<sup>21</sup> For more information about NCS plans, see Harriet G. Weinstein, "Overview of the NCS: Summer 1998," *Compensation and Working Conditions*, Summer 1998, pp. 41-44.