Counting the Incidence of Employee Benefits

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Since 1979, the Bureau of Labor Statistics' Employee Benefits Survey (EBS) has provided data on the percent of employees covered by employer-provided benefit plans. For instance, in 1992-93, 67 percent of employees in private sector establishments and State and local governments were covered by a health care plan. These data indicate the percent of workers currently participating in selected benefits, but do not indicate how frequently benefits are offered. Data on the percent of establishments offering selected benefits, and the percent of employees offered them can be estimated from survey data on plan participation.

This article examines the process of deriving estimates (from the Bureau's Employee Benefits Survey) of "establishments offering" and "employees offered" benefits. It also explores some of the difficulties associated with the process, and provides, for the first time, data from the survey on employee benefits offerings. These data include information, for example, on the percent of private sector and State and local government establishments that offered a health care plan to at least some of their employees.

There are a variety of ways to describe the association between workers and employer-provided benefits. From the employer's point of view, data may be captured on the number or percent of employers who offer health care benefits.[1] Such measures may provide an indication of "access" to health care benefits, that is, the availability of benefits. However, just because an establishment offers a benefit doesn't guarantee that all employees are covered, or even that all employees are eligible for coverage. The benefit plan may be limited to certain classes of workers, such as full-time, union, or nonunion,[2] the plan may impose requirements, typically based on length of service, before coverage is granted; or employees may opt not to participate in a plan, possibly due to a required contribution or coverage from another source.

Counting the number or percent of employees and their benefits association provides an alternative view. In this case, there are a variety of possible measures, each more limiting than the previous one. Access to a benefit may be similar to the establishment measure, that is, *the number or percent of employees working for an employer that offers health care benefits to some or all employees.* Again, the limitations on coverage cited above may apply. Perhaps a better measure of employee access would be *the number or percent of workers who are offered coverage*, for example, all full-time workers or all nonunion workers. To continue refining the calculation, the count may include only *those workers currently eligible for coverage*, having met all requirements. In this case, the count would be limited not just to a specific category of workers, but to those employees in that category who have met certain conditions, such as completing a specified length of service. Finally, the count may be limited to just *those workers actually covered*, meaning that they have met all eligibility requirements, such as length of service, and have completed any other action required

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for coverage, such as agreeing to make periodic contributions. This final calculation is the "coverage" estimate currently used in the Employee Benefits Survey.[3]

An example of each of these employee counts may be helpful to illustrate the various concepts. Consider an establishment that offers health care benefits to full-time workers who have completed 3 months of service and agree to pay 20 percent of the premium.

Employees in the establishment	200
Full time	180
Greater than 3 months service	170
Agree to pay premium	140

The following statements about the employees and their health care benefits can be made:

- 100 percent (200/200) of the workers are employed in an establishment that offers health care benefits to at least some of its workers;
- 90 percent (180/200) of the workers are offered health care benefits;
- 85 percent (170/200) of the workers are currently eligible for health care benefits;
- 70 percent (140/200) of the workers are currently covered by their employer's health care benefits.

Conditional calculations may be made, as well. For example:

- 94 percent (170/180) of the workers offered health care benefits are currently eligible for those benefits;
- 78 percent (140/180) of the workers offered health care benefits are currently covered by those benefits;
- 82 percent (140/170) of the workers currently eligible for health care benefits are actually covered by those benefits.

All these numbers indicate that there are many ways of looking at the relations of employee to benefits. As debates over benefit topics, such as health care and retirement, occur in the policy arena and elsewhere, it is not uncommon for differing sets of statistics to be used. As illustrated above, different sets of statistics may all be correct, although they may mean different things. The discussion below will examine new data on employees, employers, and benefit access, and compare these new data to existing data on benefit coverage.

The Employee Benefits Survey

Data on employees and their benefits are available from the Employee Benefits Survey, an annual sample survey of private establishments and State and local governments.[4] The survey reports data on the number and percent of workers participating in a variety of benefit plans. Participating employees are defined as those who are currently covered by the benefit plan, that is, workers who have met all eligibility requirements and completed any other action required for coverage (such as paying their share of premiums). Participating employees are the same as covered employees described above.

Data on employees participating in benefit plans provide information to answer a number of policy questions, such as:

- What changes have occurred in coverage by different types of retirement plans?
- Has family leave coverage changed over time?
- Are a greater percent of workers covered by traditional fee-for-service health care plans or by health maintenance organizations?

EBS data are used frequently to answer these types of questions and others. The detailed provision information collected by EBS allows even more in-depth analysis of worker coverage, such as comparisons of the percent of workers covered by different levels of health care deductibles, different defined benefit pension formulas, or different numbers of paid holidays.

Where EBS data have not been used as extensively is in the examination of access to and eligibility for benefits. At the present time, data on these topics are not specifically asked during survey collection. However, some data on these issues can be derived from existing EBS data, with certain limitations.[5] The following section discusses the derivation of establishment estimates from EBS and is followed by a section on employee access estimates.

Estimating the percent of establishments offering benefits

As noted, the EBS is a sample survey of establishments. Each establishment is assigned a weight based on its probability of selection in the sample; these weights, when applied to the data, yield estimates for all establishments.[6] Thus, if it were known that a sample establishment offered a benefit to some or all of its employees, the weighting scheme could be used to estimate the number and percent of all establishments that offered that benefit. Unfortunately, establishments are not asked during the data collection interview whether they provide specific benefits to some or all of their employees. Furthermore, the current data collection procedures do not make the answer to this question obvious.

EBS data are collected for a probability sample of occupations

within each sampled establishment. Depending upon the employment of the establishment, four to eight occupations are selected with a probability proportional to the number of employees in that occupation in the establishment. The sampled occupations are then weighted to represent all employees in the establishment, just as establishments are weighted to represent all establishments in the universe. This method produces reliable estimates across all establishments in the universe (such as all private industry) but may not produce accurate estimates for individual establishments. Within an establishment, it is possible that the occupations sampled do not receive particular benefits, while occupations not sampled do receive those benefits.

All survey data are obtained for the sampled occupations only. The survey does not currently ask for information about unsampled occupations or about the establishment as a whole. Because questions on establishment benefit offerings are not asked directly, estimates of establishment benefit offerings must be derived from data collected on the sampled occupations within the establishment. If any one employee in any occupation participates in a benefit plan, it can be safely assumed that the establishment offers that benefit plan. For the establishment estimates, such an establishment is counted as a "yes."

But what of those establishments in which no selected occupation has employees that participate in the benefit? With no data to indicate that some employees might be offered the benefit, the establishment must be counted as a "no." Because of this constraint, the estimates of establishments offering benefit plans may be lower than if the question were specifically asked. The estimates of establishment offerings should be considered "lower bounds," that is, the estimates are no lower than the numbers presented, but may in fact be higher. (See the box .)

Estimating the percent of establishments offering benefits

In a sampled establishment with 200 employees, the following eight occupations might be selected for data collection:

Occupation	*Number of employees*
Accountant	10
Engineer	10
Secretary	10
Foreman	10
Financial manager	10
Clerk	10
Machinist	30
Janitor	10

None of these employees is offered sickness and accident insurance. Instead, all are covered by the establishment's sick leave plan. However, there are also 20 truckdrivers in the establishment, although that occupation was not selected for data collection. The truckdrivers are represented by a labor union and receive, instead of the establishment's sick leave plan, a sickness and accident insurance plan sponsored by the union but funded by the establishment. In this case, the establishment would be counted as not offering sickness and accident insurance when in fact such a plan is offered to some workers.

With these limitations in mind, data were derived for the percent of private industry and State and local government establishments offering selected benefit plans in 1992-93.[7] (See table 1.) The analysis was limited to certain insurance and retirement benefits, as well as a few supplemental benefits. Not surprisingly, the most prevalent benefits offered by establishments were health care, life insurance, and retirement plans.

There are marked differences between the percent of establishments offering benefits and the percent of employees participating in benefits. For example, 51 percent of establishments offer health care benefits to their employees while 67 percent of employees participate. Similarly, 28 percent of establishments offer retirement benefits to their employees while 58 percent participate. Depending upon the types of establishments or workers observed, the percent of establishments offering benefits may be greater or less than the percent of employees participating. There may be a number of explanations for this phenomenon: Establishment size variations between public and private sector establishments, variations between full-time and part-time workers, and barriers that keep employees from obtaining coverage even though their establishment offers coverage.

Establishment size can affect the relationship between employer offering of and employee participation in benefit plans because, in the private sector, there are many more "small" establishments (those with fewer than 100 workers) than larger establishments, but the number of workers is split fairly evenly between smaller and larger establishments.[8] In 1992, 98 percent of all private sector establishments employed fewer than 100 workers, but only 55 percent of private sector workers were employed in these small establishments. (See table 2.) These contrasting statistics result in an average employment of 8 workers in smaller establishments compared with an average employment of 304 workers in larger establishments.

Establishment size differences can influence statistics based on establishment counts. The data indicate that, in general, a greater percent of larger establishments than smaller establishments offer certain benefits. (See table 3.) Yet, the difference between the percent of workers participating in

certain benefits in smaller and larger establishments is less dramatic as indicated below.

In small establishments, the percent of employees participating was greater than the percent of establishments offering benefits for nearly every benefit studied. This pattern maybe due to the number of workers employed in those establishments. It is likely that among small establishments, the larger ones offer certain benefits more frequently than do smaller ones; thus, a small proportion of small establishments offering a benefit can employee a larger proportion of workers.[9] Among larger establishments, the percent of establishments offering benefits is nearly always greater than the percent of employees participating, suggesting that not all workers in establishments offering benefits are participating. This phenomenon is discussed below. Because there are a small number of larger establishments to begin with, it is more likely that those offering benefits employ a proportion of employees roughly equal to the proportion of establishments. Thus, the percent of larger establishments offering benefits and the percent of employees in larger establishments participating in benefits tends to be similar.

The private sector data vary widely between percent of establishments offering benefits and percent of employees participating in benefits. However, the public sector data vary little because public sector benefits tend to be offered uniformly to all employees and, in fact, across all establishments. Thus, the percent of public sector establishments offering certain benefits and the percent of public sector employees participating in those benefits is similar. (See table 4.)

	Percent of establishments offering benefit, regardless of type of work	*Percent of establishments offering benefit at least to full-time workers*
Defined benefit	11	13
Dental benefits	19	22

Differences in benefit incidence statistics can arise due to the distribution of full-time and part-time employment in certain types of establishments. While full-time workers are offered benefits more frequently than part-time workers, part-time employment has little effect on the percent of establishments offering benefits. This is because it is rare for an establishment to offer benefits to part-time employees without also offering them to full-time employees, as shown by the data for private sector employees indicated above.

Another reason for differences between the percent of establishments offering benefits and the percent of employees participating in them is restrictions on benefits coverage. Such restrictions may include offering benefits only to certain classes of workers, such as white-collar workers. As with part-time employment, any restrictions on coverage would result in an establishment being counted as offering a benefit yet not all workers counted as participating in the benefit. Similarly, eligibility requirements may limit the percent of workers actually participating in the plan, as may other enrollment requirements, such as required employee contributions to the plan. For example, EBS data indicate that more than half of all health care participants are required to contribute toward the cost of their coverage. Another possible reason for differences between offerings and acceptances may be the voluntary nature of certain benefit plans, especially defined contribution retirement plans. While an employer may offer such benefits as an incentive for employees to save for retirement, employees simply may choose not to participate.

In all likelihood, some combination of these factors is actually driving the difference between employer offerings and employee acceptances. However, more research on establishment behavior is needed to draw further conclusions.

	Percent of establishments offering		*Percent of employees participating*	
	Small	Large	Small	Large
Health care	8	90	56	73
Retirement	24	80	38	72

Estimating the percent of employees offered benefits

Using EBS data to determine the percent of employees who are offered benefits is even less precise. In this case, the examination is not only whether any worker in the establishment participates in a particular benefit plan but also whether any worker within a sampled occupation participates in the benefit plan. Sampling procedures are designed to select homogeneous groups of employees, and the occupations sampled are the most detailed job level recognized by the establishment. Further, once a job has been sampled, only workers sharing the following three characteristics are selected: Permanent employees on either full-time or part-time work schedules, union or nonunion status, and pay based on hours worked or on an incentive system. Using these criteria, it is reasonable to assume that all employees in the sampled occupation are treated similarly, that is, they are all offered the same benefits and are subject to the same eligibility restrictions.

Assuming all workers in an occupation are offered the benefit if at least one worker in that occupation is covered by the benefit, the same problem exists with "employee offered" statistics that exists with "establishments offering" statistics. That is, it is possible that no sampled occupations are offered a benefit, yet an unsampled occupation is offered the benefit. Thus, the employee offered statistics are a lower bound statistic—no fewer than this percent of workers are offered the benefit.

An additional problem with the use of EBS data for employee offered statistics must also be addressed. Based on EBS methods, the number of workers participating is recorded for each benefit plan for all selected occupations. In some cases, participation may be recorded as zero for a selected occupation. This can mean either that the occupation was not offered the benefit, or that the occupation was offered the benefit but no workers chose to participate. There is no way to distinguish between these two cases. This problem is of particular concern when estimating employee offered statistics for benefits that tend to be offered only to workers in certain occupations or for establishments that tend to offer different benefits to different occupations.

There are two ways to consider data on employees offered benefits: either all employees in all occupations are offered the benefit if any employee in any occupation participated in the benefit (assumption A) or all employees in a selected occupation are offered the benefit only if an employee in that occupation participated in the benefit (assumption B).

The following example illustrates the differences between the assumptions. The table below shows the four occupations sampled in a department store, the employment in each occupation, and the number of those employees participating in the store's health care plan.

Under assumption A, 100 percent of the workers are offered health care benefits—the assumption being that the 12 guards were offered but choose not to participate in the plan. Assumption B yields an 84 percent offer rate (64/76), and assumes the guards were not offered the plan.

Which assumption to use is not always clear, but variations by type of establishment and type of benefit provide some indication of the effect of the assumptions. For example, the differences between assumptions A and B in the public sector tend to be small; this suggests that public sector establishments tend to offer the same benefits to workers in all occupational groups. (See table 5.) Data on the percent of workers in selected occupational groups who participate in benefit plans support this—for most benefits, there is little or no difference in the percent of workers in different occupational groups participating.[10]

Observed differences between assumptions A and B often relate to features inherent in a particular benefit. For example, the largest differences can be seen in health care benefits and defined contribution plans. In each of these cases, the requirement that an employee contribute toward plan funding may serve to lower plan participation.

Occupation	*Employment*	*Health care plan participation*
Buyer	10	5
Salesworker	50	25
Guard	12	0
Sales manager	4	4
Total	76	34

Thus, it may appear as if no workers are offered the benefit in a particular occupation, when in fact the employees are offered the plan but none participate. Such a situation would lower the percent of participating employees under assumption B.

Regardless of which assumption is used, employees in large establishments are offered benefits more frequently than are their counterparts in small establishments. (See table 6.) Public sector employees are offered health care, life insurance, and defined benefit plans more frequently than those in the private sector. In contrast, sickness and accident insurance and defined contribution plans are offered more frequently to private sector than to public sector workers.

Survey Improvements

Although this journey into the inner-workings of EBS data does not provide any rules on the proper data to use for benefit analysis, it does focus on the difficulties that exist in presenting benefit count data, and the limitations of each type of count. Beginning with the 1995 survey, questions on establishment offerings of health care and retirement benefits were asked specifically of those establishments in which none of the employees in the selected occupations participate in a health care and/or retirement plan. Thus, future statistics on employers offering health care and retirement will no longer be the lower bound; they will be true estimates of the percent of establishments offering such benefits. Data on employees offered benefits are more difficult to obtain, and may represent a significant increase in data collection resources and survey respondent burden. More research is needed on collection methods to obtain these data.

Further research is also needed into some of the data presented here. For example, the number of workers in a selected occupation may affect some of the results. Selected occupations in smaller establish-

ments are likely to have fewer workers, and perhaps less likely to have nonparticipants. Part-time workers also need further study. Although these workers may have little effect on the percent of establishments offered benefits, they have a large effect on the percent of employees offered benefits, and cause gaps between statistics on benefit offerings and benefit participation. Finally, further research is needed on establishment size and its relation to both occupation size and part-time employment. Future research into benefit offering and participation will need to control for many of these variables.

— ENDNOTES —

[1] Counting "employers" requires a careful review of definitions. The data presented here refer to *establishments*, that is single physical locations that produce goods or services. An establishment is not necessarily a firm; it may be a branch plant, for example, or a warehouse. As another example, each outlet of a large retailer is considered an establishment. Because of this definition, it is difficult to interpret what the *number* of employers providing a benefit really means. In this research, employer-offering statistics are given as the *percent* offering out of all employers.

[2] While employers are allowed to offer certain types of benefit plans only to some workers, nondiscrimination provisions of the Internal Revenue Code do exist that attempt to ensure that all employees are treated in a similar manner.

[3] Additional discussion of counting employees for benefit statistics may be found in Janet L. Norwood, "Measuring the Cost and Incidence of Employee Benefits," *Monthly Labor Review*, August 1988, pp. 3-8.

[4] Some benefits data are also available from the Current Population Survey, a monthly survey of households. These data provide information on the availability of benefits by individual characteristics, such as sex and race, but do not provide the benefit detail available through the EBS establishment survey.

[5] Data from the Employee Benefits Survey have been used to estimate the percent of establishments offering choices of health care benefits and the percent of workers with such choices. See, for example, Michael Bucci and Robert B. Grant, "Health Insurance: Employer Offerings and Employee Choice in Small Private Establishments," *Compensation and Working Conditions*, August 1994, pp. 1-3.

[6] For additional information on weighting procedures used in the Employee Benefits Survey, see *Employee Benefits in Medium and Large Private Establishments, 1993*, Bulletin 2456, Bureau of Labor Statistics, November 1994.

[7] In Tables 1, 3, and 4, an establishment was counted as offering a particular type of benefit if at least one employee in a sampled occupation participated in a benefit plan.

[8] In this discussion, large establishments are those employing 100 workers or more. In Employee Benefits Survey publications, these establishments are referred to as "medium and large."

[9] Data from the Employee Benefits Survey support the idea that larger small establishments offer benefits more frequently than do smaller ones. For example, in 1992, 22 percent of full-time employees in small establishments participated in a defined benefit pension plan. However, only 12 percent of full-time employees in small independent businesses, those establishments not part of larger firms, participated in such pension plans. In contrast, about half the full-time workers in small establishments that were part of larger firms participated in defined benefit pension plans.

[10] See *Employee Benefits in State and Local Governments, 1992*, Bulletin 2444, Bureau of Labor Statistics, July 1994.

Table 1. Percent of establishments offering selected benefits, private industry and State and local government, 1992-93

Benefit	All	Private	Public
Sickness and accident insurance	20	20	29
Long-term disability insurance	12	12	23
Health care benefits	51	49	96
Dental care benefits	20	19	53
Life insurance	40	38	78
All retirement	28	26	93
Defined benefit	13	11	81
Defined contribution	20	20	15
Savings and thrift	8	8	3
Money purchase	4	4	12
Severance pay	11	10	21
Long-term care insurance	1	1	7
Recreation facilities	3	3	8
Job-related education assistance	23	22	53
Non-job-related education assistance	3	3	11

Table 2. Employment by size of establishment, private industry, 1992

Establishment size	Establishments		Employment	
	Number	Percent	Number	Percent
Total	6,277,417	100	87,458,218	100
Fewer than 100 workers	6,148,458	98	48,243,576	55
Fewer than 5 workers	3,664,934	58	5,950,478	7
5 - 9 workers	1,147,950	18	7,564,035	9
10 - 19 workers	705,954	11	9,494,997	11
20 - 49 workers	468,757	8	14,190,050	16
50 - 99 workers	160,863	3	11,044,016	13
100 or more workers	128,959	2	39,214,642	44

Table 3. Percent of establishments offering and percent of employees participating in selected benefits, private industry by size of establishment,[1] 1992-93

Benefit	Establishments offering		Employees participating	
	Small	Large	Small	Large
Sickness and accident insurance	19	42	23	40
Long-term disability insurance	11	35	18	35
Health care benefits	48	90	56	73
Dental care benefits	17	64	26	54
Life insurance	37	86	51	80
All retirement	24	80	38	72
Defined benefit	10	45	18	51
Defined contribution	19	64	28	45
Savings and thrift	7	39	11	26
Money purchase	4	8	4	7
Severance pay	10	34	13	37
Long-term care insurance	1	3	1	5
Recreation facilities	3	15	6	24
Job-related education assistance	21	61	30	66
Non-job-related education assistance	2	13	4	20

[1] Medium and large establishments are those employing 100 or more workers. Small establishments are those employing fewer than 100 workers.

Table 4. Percent of establishments offering and percent of employees participating in selected benefits, State and local government, 1992

Benefit	Establishments offering	Employees participating
Sickness and accident insurance	29	21
Long-term disability insurance	23	26
Health care benefits	96	86
Dental care benefits	53	62
Life insurance	78	84
All retirement	93	89
Defined benefit	81	83
Defined contribution	15	8
Savings and thrift	3	2
Money purchase	12	7
Severance pay	21	30
Long-term care insurance	7	13
Recreation facilities	8	16
Job-related education assistance	53	63
Non-job-related education assistance	11	17

Table 5. Percent of employees offered selected benefits, by method of calculating estimates, private industry and State and local government, 1992-93

Benefit	All		Private		Public	
	Assumption A	Assumption B	Assumption A	Assumption B	Assumption A	Assumption B
Sickness and accident insurance	35	29	36	31	26	21
Long-term disability insurance	34	26	34	26	34	27
Health care benefits	84	72	82	69	99	91
Dental care benefits	54	46	50	42	75	67
Life insurance	77	68	74	65	93	85
All retirement	70	57	65	51	99	89
Defined benefit	46	38	38	30	94	84
Defined contribution	46	30	52	34	16	6
Savings and thrift	26	15	30	17	4	1
Money purchase	8	5	8	5	13	5

NOTE: Under Assumption A, all employees in the establishment are counted as offered a benefit if any employee in any occupation in the establishment participated in the benefit. Under Assumption B, all employees in an occupation are counted as offered a benefit only if an employee in that occupation participated in the benefit.

Table 6. Percent of employees offered selected benefits, by method of calculating estimates and size of establishment, private industry, 1992-93

Benefit	Small establishments		Large establishments	
	Assumption A	Assumption B	Assumption A	Assumption B
Sickness and accident insurance	26	23	49	40
Long-term disability insurance	22	18	49	36
Health care benefits	72	60	94	80
Dental care benefits	34	27	72	61
Life insurance	61	52	91	82
All retirement	46	32	88	75
Defined benefit	20	12	60	52
Defined contribution	38	20	70	52
Savings and thrift	16	5	47	32
Money purchase	5	3	10	8

NOTE: Under Assumption A, all employees in the establishment are counted as offered a benefit if any employee in any occupation in the establishment participated in the benefit. Under Assumption B, all employees in an occupation are counted as offered a benefit only if an employee in that occupation participated in the benefit.