

Health Insurance Series Now Available from the Employment Cost Index

by [Steven P. Paben](#) and [Robert W. VanGiezen](#)

Bureau of Labor Statistics

Originally Posted: August 27, 2003

BLS has recently made supplemental data available for the change in the cost of health insurance for private industry workers from 1980 through 2002; in addition, standard errors have been calculated for the most recent 7 years of this series.

The Bureau of Labor Statistics (BLS) publishes a quarterly index, the Employment Cost Index (ECI), which includes measures of change in the cost of employee benefits. Data are collected for individual benefits within several benefit categories: paid leave, supplemental pay, insurance benefits, retirement and savings, legally required benefits, and other benefits. BLS has published benefit cost changes for private industry workers in the ECI since 1980. In addition to providing 12-month changes in benefit costs, BLS has computed the standard error for these estimates. The standard error is a statistical measure designed to assess the precision of the estimates. Table 1 shows the 12-month percent changes and standard errors for all benefits from 1996 to 2002.

BLS has recently made supplemental data available for the change in the cost of health insurance for private industry workers from 1980 through 2002. This is the only benefit for which separate data are available. In addition, standard errors have been calculated for the most recent 7 years of this series. Table 2 shows the 12-month percent changes and standard errors for health insurance from 1996 to 2002.

Changes in health insurance costs were moderate during 1995 through 1997. Beginning with the second quarter of 1995, 12-month changes were less than 1 percent through the fourth quarter of 1997. In 1998 and 1999, costs began to rise slowly, reaching gains of nearly 6 percent by the fourth quarter of 1999. The last 3 years have seen large increases in health insurance costs, with the costs in 2002 showing double-digit gains.

Chart 1 illustrates the pattern of health insurance changes compared with the gains in all benefit costs. During the period of moderate changes in health insurance costs in the mid-1990s, total benefit costs rose more rapidly than health insurance costs. Gains in health insurance costs began to outstrip those of all benefits during 1998 and 1999. Since 1999, the gap between health insurance costs and total benefit costs has widened, as health insurance costs began to rise sharply.

Because the ECI is a sample survey, it is subject to sampling errors. Sampling errors are differences that occur between the results computed from a sample of observations and those computed from all observations in the population. The estimates derived from different samples selected using the same sample design may differ from one another. The *standard error* is a measure of the variation among these differing estimates. It can be used to measure the precision with which an estimate from a particular sample approximates the expected result of all possible samples. The chances are about 68 out of 100 that an estimate from the survey differs from a complete population figure by less than the standard error. The chances are about 90 out of 100 that this difference would be less than 1.6 times the standard error.

From 1996 to 2002, the average 12-month percent change standard error for total benefit costs was approximately 0.38 percent, while the average 12-month percent change standard error for health insurance costs was approximately 0.51 percent. This suggests that the data on all benefits combined--which includes many items such as Social Security costs that do not vary widely from period to period--are generally more precise than the data on health insurance.

Although standard errors have been calculated for these estimates, the 12-month percent changes in health insurance costs from the ECI should be used with caution for several reasons. First, employer nonresponse for the health insurance component is substantial, which may affect the quality of the estimate. Second, there are fewer observations supporting health insurance estimates compared with total benefit estimates. Finally, in some cases, respondents are able to report only a single cost for a combination of benefits (for example, life insurance and health insurance); in these instances, BLS allocates the cost among the benefits. Users should also be aware that the ECI may understate health insurer increases for a

fixed set of plans because employers may reduce their contributions or employees may switch to lower cost health plans where there is an employee contribution.

BLS plans to update the health insurance estimates quarterly and make them available on the day of the ECI news release. The data will be available by e-mail request at ocltinfo@bls.gov, by telephone at 202-691-6199, or on the Internet at <http://www.bls.gov/ect/home.htm>.

Steven P. Paben
 Statistician, Statistical Methods Group, Bureau of Labor Statistics.

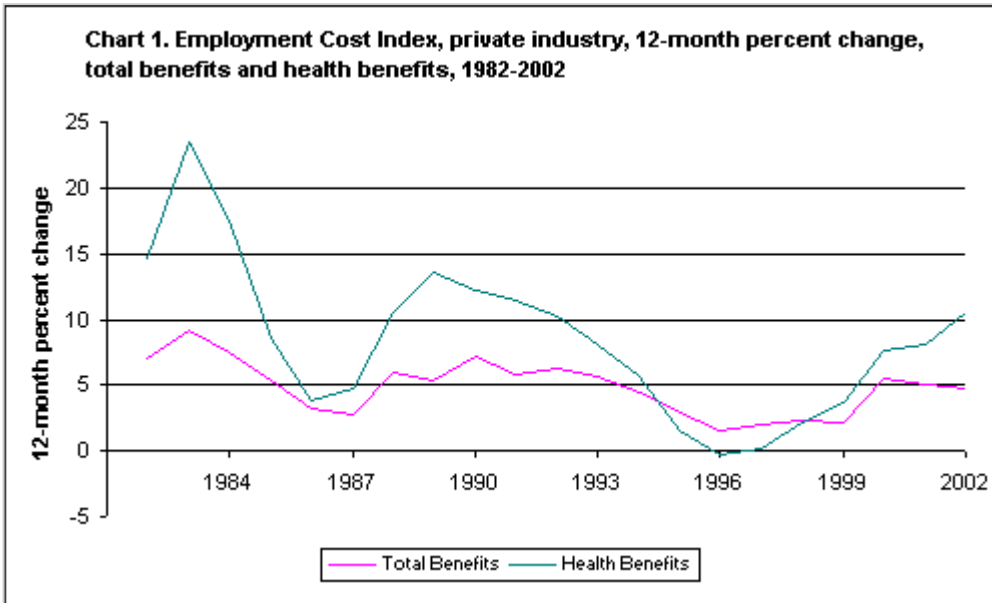
Robert W. VanGiezen
 Economist, Division of Compensation Data Analysis and Planning, Office of Compensation and Working Conditions, Bureau of Labor Statistics.
 Telephone: 202-691-5186, E-mail: VanGiezen.Robert@bls.gov

Table 1. Employment Cost Index: 12-month percent changes in employer costs per hour worked and the standard error, all benefits in private industry, 1996-2002

Year	Percent changes and standard errors for 12 months ended--							
	March		June		September		December	
	Percent change	Standard error	Percent change	Standard error	Percent change	Standard error	Percent change	Standard error
1996	1.6	0.3448	1.7	0.3595	1.8	0.4503	2.0	0.6084
1997	2.0	0.3336	2.0	0.3135	2.0	0.3111	2.3	0.3258
1998	2.3	0.3288	2.6	0.3659	2.6	0.3475	2.4	0.2819
1999	2.2	0.4679	2.5	0.5033	2.8	0.4735	3.4	0.4872
2000	5.5	0.4354	5.7	0.3984	6.0	0.3544	5.6	0.3340
2001	5.0	0.3925	4.8	0.3948	4.9	0.3804	5.1	0.3907
2002	4.8	0.3334	5.1	0.3460	4.8	0.3239	4.7	0.3396

Table 2. Employment Cost Index: 12-month percent changes in employer costs per hour worked and the standard error, health insurance in private industry, 1996-2002

Year	Percent changes and standard errors for 12 months ended--							
	March		June		September		December	
	Percent change	Standard error	Percent change	Standard error	Percent change	Standard error	Percent change	Standard error
1996	-0.3	0.4348	0.1	0.4079	0.7	0.4454	0.4	0.3223
1997	0.2	0.3547	0.7	0.4149	0.8	0.4064	0.9	0.4207
1998	2.2	0.6305	2.6	0.5738	2.2	0.9140	2.5	0.8003
1999	3.7	0.5245	4.0	0.6220	5.0	0.3935	5.8	0.4658
2000	7.6	0.4158	8.0	0.4165	8.5	0.4474	8.5	0.4289
2001	8.1	0.5214	8.6	0.5815	8.7	0.5793	9.2	0.6091
2002	10.5	0.5680	11.4	0.4729	11.2	0.5750	10.2	0.5319



Employment Cost Index, private industry, 12 month percent change, total benefits and health benefits, 1982-2003

Year	Total Benefits	Health Benefits
1982	7	14.7
1983	9.1	23.5
1984	7.5	17.6
1985	5.3	8.5
1986	3.2	3.9
1987	2.8	4.7
1988	5.9	10.5
1989	5.4	13.6
1990	7.2	12.2
1991	5.8	11.5
1992	6.3	10.3
1993	5.6	8.1
1994	4.4	5.7
1995	2.9	1.6
1996	1.6	-0.3
1997	2	0.2
1998	2.3	2.2
1999	2.2	3.7
2000	5.5	7.6
2001	5	8.1
2002	4.8	10.5