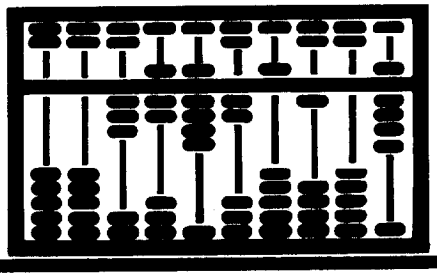
Technical notes



Employment Cost Index rebased to June 1989

Albert E. Schwenk

Beginning with the publication of March 1990 data, the Employment Cost Index has been rebased from June 1981 to June 1989.[1] All published ECI series are affected and now have a common base. The employment weights will continue to be those obtained from the 1980 census. While rebasing changes the reference point from which cumulative changes are measured, it does not affect percent changes calculated from the index, except for rounding.

This technical note describes the ECI, explains why it was rebased, and discusses the interpretation of the rebased index and subindexes and how rebasing differs from reweighting.

What the index measures

The ECI is an employment-weighted measure of change in the cost of employing a fixed set of labor inputs. Labor costs measured by the ECI include wages, salaries, and the employer cost for employee benefits. As noted, the weights currently used are employment counts from the 1980 census.

The ECI, a quarterly series, relates to payroll periods including the 12th of March, June, September, and December. The data are presented as index levels and 3-month and 12-month changes.

Like other indexes, the ECI indexes permit users to tell at a glance the cumulative change in a series from the base month to any date for which data are available. For example, as shown in table 1, the September 1989 index level for civilian worker compensation costs was 151.3, which means that those costs had risen 51.3 percent from the June 1981 base.

Indexes also permit users to directly compare cumulative changes between series that have a common base. For example, table 1 also shows that by September 1983, compensation costs for State and local government workers had risen 20.8 percent since June 1981, while costs for private industry workers had risen 15.6 percent. By September 1989, these costs had increased 67.9 percent and 47.9 percent.

Reason for rebasing

Although indexes are useful for economic analysis, they were not available for all ECI series. For most new series, only percent changes were published. A review of the development of indexes from the ECI will show why some were not published and why rebasing permits indexes to be published for all series.

Index numbers from the ECI were first published in early 1982. June 1981 was selected as the base for the indexes because that month marked the beginning of quarterly series in State and local governments. Previously, data had been available for private industry only. With June 1981 as the base, indexes could be developed for all series published as of March 1982.

Over the 8 years since then, the number of published series has more than doubled, to over 200. Among the new series have been wage and compensation cost changes for hospitals and all health services, as well as business services, communications, food stores, and insurance. Also added have been measures of benefit cost changes for major occupational and industry groups.

Publication of most of the additional series was made possible by a substantial increase in the ECI sample, the result primarily of an effort by the Bureau of Labor Statistics to improve the information available on the service-producing sector of the economy.[2] However, indexes for the new series could not be extended back to June 1981. By the September 1989 quarter, indexes were available for fewer than half of all ECI published series.

It would have been possible to provide indexes for new series without changing the index base (June 1981 = 100) for old series. This could have been done by selecting as the base for each series the date when data of publishable quality were first available. For example, 3-month changes for hospitals became publishable in the June-to-September-1986 quarter; thus, June 1986 could have been the base for this series. The following tabulation presents compensation cost indexes for hospitals with the June 1986 base and for private industry with the June 1981 base:

	June 1986	*June 1987*	*June 1989*
Private industry .	129.9	133.8	146.1
Hospitals	100.0	104.6	118.4

Note that the indexes are not comparable because they have different bases. The use of quarterly and annual percent changes avoids this problem. Therefore, only these percent changes have been published for new series lacking data back to 1981.

Examples of rebasing

Rebasing of the ECI was done, using indexes with base June 1981 = 100, by dividing the index value for June 1989 into the other index values and multiplying by 100.[3] To illustrate, in table 1, the civilian worker index level for September 1989 with June 1989 as base is found by dividing the former index by the latter:

$$151.3/148.9 = 1.016$$

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and then multiplying the relative change by 100, yielding an index of 101.6.

Similarly, the index level for civilian worker compensation costs in September 1983 with June 1989 as base is found by dividing the former index by the latter:

$$116.5/148.9 = 0.782$$

and then multiplying the relative change by 100 to yield an index of 78.2.

The change in the index from one quarter to another or from one year to another is not affected by rebasing (except for rounding). The percent change in the index for private industry workers between June 1989 and September 1989 is the same whether the index used to calculate the quarterly change has as a base June 1981, September 1983, or June 1989.

Rebasing compared to reweighting

In contrast to rebasing, reweighting (the introduction of new employment weights by industry and occupation) alters the interpretation of percent changes calculated from indexes but leaves index numbers before reweighting unaltered.[4] For example, prior to introduction of new ECI weights in 1986, the published percent changes measured the change in the cost of the 1970 set of labor inputs. After 1986, the changes measured the change in the cost of the 1980 set of labor inputs. The indexes for June 1986, using the new weights, were linked to those for March 1986, using the old weights, and the indexes for the period prior to June 1986 were not changed. After June 1986, the user cannot tell, from the published indexes alone, what the index change would have been had 1970 weights continued to be used. □

Table 1. **Employment Cost Index, compensation costs, selected series and periods**

[June 1981=100]

Series	June 1981	Sept. 1983	Sept. 1985	June 1989	Sept. 1989
Civilian workers[1]	100.0	116.5	128.4	148.9	151.3
Private industry workers	100.0	115.6	126.8	146.1	147.9
State and local government workers	100.0	120.8	136.5	162.5	167.9

[1] Excludes farm, household, and Federal Government workers.

Footnotes

[1] The March 1990 ECI press release, to be issued April 25, presents indexes with the new base. A complete listing of ECI historical data, including indexes with the new base, is available. Historical indexes will appear in the ECI annual bulletin, to be published in the fall. Rebased ECI indexes will be published in the Current Labor Statistics section, beginning with the June 1990 issue. A complete historical listing of indexes on the old base will be available upon request for two years.

[2] In addition, in March 1989, BLS began publishing wage, benefit, and compensation cost changes for detailed aerospace industries. The new series were made possible when the Aerospace Industries Association provided funds for their development and maintenance.

[3] Unpublished indexes with a base later than June 1981 also were rebased.

[4] See Albert E. Schwenk, "Introducing new weights for the Employment Cost Index," *Monthly Labor Review*, June 1985, pp. 22–27. The study showed that the reweighting had very little impact on the indexes.