Fatality Rates Technical Notes

Census of Fatal Occupational Injuries (CFOI)
Bureau of Labor Statistics
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Fatality rates are used to compare the risk of incurring a fatal work injury among worker groups with varying employment levels. Since employment data are not collected by the Census of Fatal Occupational Injuries (CFOI), fatality rates were calculated using estimates of employed civilian workers (age 16 and older) from the Current Population Survey (CPS) supplemented with counts for resident armed forces provided by the Department of Defense (DOD).

To accurately describe fatality risk for a worker group, the numerator (fatalities) and denominator (employment) of the rate must refer to the same group of workers. Because the employment data used in the rate calculations exclude workers under the age of 16, fatalities occurring to these workers were also excluded from the numerator. Fatality rates, expressed as the number of fatal work injuries per 100,000 workers, were calculated as follows:

> Fatality rate = (N / W) x 100,000
> N = the number of worker fatalities, age 16 and older (CFOI)
> W = the annual average number of employed workers, age 16 and older (CPS and DOD)

To illustrate, in 2003, there were 5,575 workplace fatalities according to CFOI. Of these, 5,550 occurred to workers age 16 and older. According to the combined CPS and DOD figures, employment estimates for workers age 16 and older totaled 138,928,000.

> N = 5,550
> W = 138,928,000
> Fatality rate = (N / W) x 100,000
> Fatality rate = (5,550 / 138,928,000) x 100,000 = 4.0
> Fatality rate = 4.0 fatalities per 100,000 workers

There are a number of limitations to these fatality rates:

- The CPS employment data used to calculate rates are estimates based upon a sample rather than a complete count. Therefore, the CPS estimates and fatality rates have sampling errors. The figures obtained for the rates may differ from figures that would have been obtained if it had been possible to take a census of employed persons. See Explanatory Notes and Estimates of Error in the February 2004 Employment and Earnings for an explanation of CPS sampling and estimation methodology, and standard error computations. The relative standard errors of the CPS employment estimates can be used to approximate confidence ranges for the fatality rates.

- The CPS categorizes workers according to their primary job, which may differ from the job the deceased was working in when fatally injured as reported in the Census of Fatal Occupational Injuries.

- The rates are based on employment. They factor out differences in the number of fatal work injuries between worker groups due to different employment levels. They do not take into account differences in the number of hours worked. Hours-based rates, which factor out these differences, are generally considered more accurate. However, because of limitations in the availability of data for hours worked, the rates are employment based.

- Rates are calculated at the level of detail available from the CPS and DOD employment data. Additionally, rates are only calculated for those occupations and industries which met minimum thresholds in the base year (2003), having at least 30 fatalities and 40,000 employed.