ratiation to the regression models. This had a substantial negative effect on
the reported duration difference. However, it is difficult to determine whether
this is genuinely the result of the longer-duration unemployed responding
with smaller differences. An alternative explanation is that the finding is
purely a statistical artifact. Conditional on a high reported May duration,
the difference between the June and May durations is likely to be less than
if the value of $D_{UR_{A4}}$ is low. This means that in a regression model for
$D_{UR_{DIFF}}$, will have a negative coefficient. This hypothesis also predicts
that, by similar reasoning, $D_{UR_{A4}}$ should have a positive coefficient. Some
support for this view was provided when we substituted $D_{UR_{A4}}$ for $D_{UR_{A1}}$
and observed a significant positive coefficient. Therefore, because the
results appear spurious, we have not reported equations which include
duration variables.

"Our equations also include control variables for the respondents' rotation
groups in the CPS. Rotation Group I indicates individuals who participated
in the survey in May, June, July, and August. Rotation Group II denotes those who participated only in May, June, and July. The omitted
dummy variable is for those who participated only in the May and June surveys. These variables, not reported in the tables, never proved statisti-
cally significant.

10This was calculated as:

$$
\frac{Prob(\text{transition from unemployment to NILF})}{Prob(\text{transition from unemployment to employment or NILF})}
$$

For further discussion of labor market dynamics in this framework, see
Kim B. Clark and Lawrence H. Summers, "Labor Market Dynamics and
Unemployment: A Reconsideration," Brookings Papers on Economic Ac-

11Job losers and leavers were categorized on the basis of the "why did . . . start looking for work?" question. Workers who explained that
they were on permanent or temporary layoff in response to the question
"why was . . . absent from work last week?" were classified as on layoff.
New entrants were those nonleavers and nonlosers who claimed either that
(i) they had never worked at all, or (ii) they had never worked full time
for more than 2 consecutive weeks. Any workers who did not fall into
any of these four categories were classified as reentrants.

BLS' 1982 survey
of work-related deaths

JANET MACON

The number of work-related deaths in private sector estab-
hlishments with 11 employees or more was 4,090 in 1982,
compared with 4,370 in 1981. The corresponding fatality
rate was 7.4 deaths per 100,000 full-time workers in 1982,
and 7.6 in 1981. (See table 1.)

Employers participating in the Bureau of Labor Statistics'
Annual Survey of Occupational Injuries and Illnesses were
asked to supply specific information about deaths caused by
hazards in the work environment, that is, the object or event
most closely associated with the circumstances of the fa-
tality. Estimates of the percentage of fatalities by cause
represent the average for the 1981 and 1982 surveys. Per-
centages were calculated for the 2 years combined because
large sampling errors at the industry division level preclude
precise comparisons based on year-to-year changes.

The 4,090 fatalities in 1982 represent all reported deaths
resulting from a job-related injury or illness in 1982, re-
gardless of the time between the injury or onset of illness and
death. About 340 of these fatalities were related to
illness.

Among industry divisions, fatality rates ranged from 44.3
per 100,000 full-time workers in mining industries to 2.5
in finance, insurance, and real estate industries. Between
1981 and 1982, rates decreased in 5 of the 8 industry di-
visions, and increased by more than 15 percent in agricul-
ture, forestry, and fishing; transportation and public utilities;
and services.

Transportation and public utilities industries reported the
largest number of fatalities. The percentage of total fatalities
increased in three of the industry divisions, decreased in
three, and remained unchanged in two. Although the number
of fatalities decreased in construction and mining, the per-
centage of the total remained unchanged.

Analysis by cause

More than half of all fatalities were caused by over-the-
road motor vehicles, falls, heart attacks, or industrial ve-
cicles or equipment. (See table 2.) About 1 of every 4
fatalities involved over-the-road motor vehicles. Falls, heart
attacks, and industrial vehicles combined contributed 32
percent of total fatalities; falls, 12 percent; heart attacks, 10
percent; and industrial vehicles or equipment, 10 percent.

Over-the-road motor vehicles were the major cause of
death in 5 of the 8 industry divisions. About 1 of every 3
of these fatalities occurred in transportation and public util-
ities industries, which had only 7 percent of total employ-
ment. (See table 3.)

Twelve percent of all fatalities involved falls. The con-
struction and manufacturing industries together accounted
for about 2 of every 3 falls.

About 10 percent of all fatalities were due to heart attacks.
Heart attacks occurred at a slightly higher frequency in
construction and transportation and public utilities, based
on employment percentages.

Industrial vehicles or equipment were involved in 10 per-
cent of all fatalities. More than half of these cases occurred
in construction and manufacturing industries. Another 14
percent occurred in oil and gas extraction, which accounts
for only 1 percent of total employment.

The "all other" category accounted for 3 percent of total
fatalities. This category includes, for example, contact with
radiation or toxic substances, drowning, train accidents, and
death from various occupational illnesses.

Analysis by industry

Agriculture, forestry, and fishing. Industrial vehicles or
equipment were involved in 27 percent of the fatalities,
while over-the-road motor vehicles contributed 18 percent
of the cases. Electrocution accounted for 16 percent and
falls, 12 percent.
Industrial vehicles or equipment combined contributed an additional one-third of the cases; electrocutions caused 11 percent of the fatalities.

**Manufacturing.** Fatalities resulting from over-the-road motor vehicles, falls, heart attacks, and plant machinery operations combined were the cause of death in 50 percent of the cases; 20 percent were due to over-the-road motor vehicles. Falls, heart attacks, and plant machinery operations each contributed 10 percent of the total for the industry.

**Transportation and public utilities.** As in previous years,
more than half of the cases were attributable to accidents involving over-the-road motor vehicles. Employees caught in, under, or between objects other than vehicles or equipment were the cause of 9 percent of the cases.

**Wholesale and retail trade.** Nearly 1 of every 3 fatalities were nonaccidental cases where an employee was intentionally killed on the job. The majority of these cases involved gunshot injuries. Twenty percent of the fatalities were caused by to over-the-road motor vehicle accidents.

**Finance, insurance, and real estate.** Three of every four cases were attributable to over-the-road motor vehicles, heart attacks, or employees caught in, under, or between objects other than vehicles or equipment.

**Services.** The major cause of death was over-the-road motor vehicles, 29 percent of the cases. Heart attacks and nonaccidental injuries accounted for another 31 percent of the cases.

### Background of survey

The Annual Survey of Occupational Injuries and Illnesses is a Federal-State Program in which reports are received and processed by State agencies participating with BLS. The fatality data are based on the records which employers maintain under the Occupational Safety and Health Act of 1970. The survey covers units in private industries. Excluded from coverage under the act are working conditions which are covered by other Federal safety and health laws, the self-employed, farmers with fewer than 11 employees, private households, and employees in Federal, State, and local government agencies. In a separate reporting system, agencies of the Federal Government file reports comparable with those of private industry with the Secretary of Labor.

The 1982 survey, to which response was mandatory, involved a sample of 280,000 units with 11 or more employees. Estimates based on a sample may differ from figures that would have been obtained if a complete census of establishments had been possible using the same schedules and procedures. Relative standard errors are calculated for estimates generated from the Annual Survey of Occupational Injuries and Illnesses and are available.

| Table 3. Distribution of occupational fatalities in establishments in the private sector with 11 employees or more, by industry, 1981–82 average [in percent] |
|---|---|---|---|---|---|---|---|---|
| **Cause** | **Total** | **Agriculture, forestry, and fishing** | **Mining, oil and gas extraction only** | **Construction** | **Manufacturing** | **Transportation and public utilities** | **Wholesale and retail trade** | **Finance, insurance, and real estate** | **Services** |
| Over-the-road motor vehicles | 100 | 3 | 6 | 10 | 18 | 37 | 11 | 4 | 11 |
| Falls | 100 | 4 | 4 | 47 | 20 | 8 | 6 | 2 | 8 |
| Heart attacks | 100 | 3 | 5 | 16 | 24 | 11 | 18 | 7 | 16 |
| Industrial vehicles or equipment | 100 | 12 | 14 | 32 | 23 | 5 | 6 | 0 | 9 |
| Struck by objects other than vehicles or equipment | 100 | (*) | 10 | 16 | 33 | 8 | 31 | 0 | 3 |
| Electrocutions | 100 | 12 | 4 | 34 | 21 | 18 | 3 | 0 | 8 |
| Nonaccidental injuries | 100 | 2 | (*) | 6 | 5 | 63 | 3 | 20 |
| Aircraft crashes | 100 | 2 | 9 | 6 | 22 | 32 | 6 | 5 | 19 |
| Caught in, under, or between objects other than vehicles or equipment | 100 | 1 | 4 | 12 | 21 | 30 | 20 | 9 | 3 |
| Fires | 100 | 12 | 15 | 6 | 46 | 14 | 1 | 2 | 2 |
| Plant machinery operations | 100 | 1 | 2 | 11 | 78 | 2 | 7 | 0 | 0 |
| Explosions | 100 | 0 | 5 | 14 | 47 | 20 | 8 | 0 | 6 |
| Gas inhalation | 100 | 2 | 9 | 10 | 48 | 14 | 12 | 0 | 5 |
| All other | 100 | 6 | 5 | 18 | 33 | 13 | 16 | 1 | 8 |

**FOOTNOTE**

1 Since 1977, the fatality data have been published only for units with 11 employees or more because the reductions of the survey samples affected primarily employers with fewer than 11 employees. The reductions were in response to presidential directives on reducing the paperwork burden of employers selected to participate in statistical surveys. Data for occupational fatalities in coal, metal, and nonmetal mining and railroads were provided by the Mine Safety and Health Administration of the U.S. Department of Labor and by the Federal Railroad Administration of the U.S. Department of Transportation; however, data were not provided on the objects or events which resulted in on-the-job deaths for these industrial activities.