Regional Variations in Workplace Homicide Rates

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Nearly 1 in 5 on-the-job fatalities result from homicides; almost half occur in the South. This study found a statistically significant correlation between unemployment rates and occupational homicide rates.

Violence in the workplace continues to be a leading cause of occupational fatalities in the United States. According to the BLS Census of Fatal Occupational Injuries, for example, nearly 16 percent of the 5,915 occupational fatalities that occurred in 2000 were due to assaults and violent acts.[1] Such assaults, which include attacks by animals and self-inflicted injuries (suicides), have been declining in recent years. In 1993, for example, 21 percent of all fatal occupational injuries were the result of assaults and violent acts. In 1997, the comparable figure was 18 percent.[2]

Similar downward trends can be identified when examining the more specific category occupational homicides. BLS economists Eric F. Sygnatur and Guy A. Toscano reported that homicides decreased 18 percent from 1997 to 1998 and 34 percent from 1994 to 1998.[3]

The kind of occupation in which one is employed significantly affects the probability of one's becoming a victim of occupational homicide. The study by Sygnatur and Toscano found that workers engaged in an occupation in which cash transactions take place are at greatest risk.[4] In particular, the occupational group at greatest risk of a workplace homicide is taxicab drivers and chauffeurs, with a rate of 17.9 homicides per 100,000 workers--a risk level that is 36 times that of all employed persons. These workers are more susceptible to occupational homicide than others because they often work alone, handle cash transactions, and work in areas with higher crime rates.[5]

Supervisors and proprietors in sales occupations have the highest counts of fatal assaults among occupations. Grocery stores had the highest count of all industries, with 16 percent of the total, followed closely by eating and drinking places. Retail trade as a whole accounted for 45 percent of the homicide total in 2000.

Examining the characteristics of the victims involved in workplace homicides reveals that the majority of the victims are men. In a 1995 study, for example, Guy Toscano and William Weber reported that 82 percent of all workplace homicide victims in 1993 were men and that robbery was the principal motive.[6] In fact, robberies and related crimes accounted for three-fourths of all workplace homicides that year. The data also show that 82 percent of all occupational homicides resulted from shootings, by far the most common violent act in the workplace.[7]

Crime And Regional Differences

Regional differences have been found to exist in the kinds of crimes committed. BLS data and the data in the FBI's *Uniform Crime Report* are broken down into four major U.S. regions: Northeast, Midwest, South, and West.[8] From 1992 to 1999, the Northeast region experienced the highest robbery rates relative to the other three regions. The South ranked highest in terms of both overall property crime rates and violent crime rates; it had the highest rates for murder, rape, aggravated assaults, burglary, and larceny. The West ranked highest for motor vehicle theft, and the Midwest consistently ranked lowest of all three regions in violent crimes and property crimes.[9]

Crime And Unemployment

Although social scientists tend to agree that persistent, long-term unemployment leads to poverty and thus higher crime rates,[10] studies examining the relationship between unemployment and crime have produced inconsistent results. According to some researchers, for example, unemployment is believed to contribute significantly to criminal behavior.[11] Other researchers believe that unemployment influences crime negatively by decreasing criminal opportunity (more people at home

and therefore fewer unguarded, "suitable targets"), while at the same time influencing it positively by motivating toward crime people who are affected adversely by economic downturns.[12] In their study of the effect of annual changes in unemployment on changes in the crime rate, David Cantor and Kenneth C. Land find significant effects related to negative opportunity for homicide, robbery, and burglary, and a significant effect related to positive motivation for robbery and burglary.[13] Still other studies have identified relationships between unemployment and involvement in a crime, suggesting that the decrease in income and potential earnings associated with involuntary unemployment increases the relative returns to illegal activity.[14]

Many factors can play a role in the occurrence of certain types of crimes. Two factors--unemployment levels and regional geographic location--have been found to have a relationship with criminal activity. The Midwest experiences the lowest rates for property and violent crimes, while the West and South experience the highest rates for most violent crimes and property crimes. The Northeast has the highest rates for robbery. Relationships were found between unemployment levels and various forms of crime, including robberies, assaults, and homicides. Because previous research has been inconclusive, the subject warrants further investigation in order to determine the relationship unemployment levels have with fatal occupational assault rates.

This study examines the relationship between regional unemployment rates and occupational fatalities due to assaults. While the literature supports the relationships between these factors and crimes in society overall, it is believed that by analyzing occupational homicides in terms of regional geographic location and regional unemployment rates, one may be able to identify situations that increase the likelihood of one becoming the victim of a workplace homicide.

Methods

Sources of Data. Data on fatal occupational assaults are from the BLS Census of Fatal Occupational Injuries for 1997 to 2000. Cases that resulted in a death and were assigned an event code defined as an assault and violent act by a person or persons were included in the analysis. Self-inflicted injuries and assaults by animals were omitted. Information about the month in which the assault occurred, the year, and the geographic region in the United States were tabulated.[15] (See table 1.)

BLS monthly employment and unemployment data were obtained for the analysis period. The number of persons employed in the civilian labor force, not seasonally adjusted, was obtained from the Local Area Unemployment Statistics (LAUS) program. The data were obtained at the regional level for 1997 to 2000. The percentage of unemployed persons for each month was also obtained for each region. Using the number of reported occupational homicides for each month from the Census of Fatal Occupational Injuries (CFOI), the monthly workplace homicide rates per 100,000 employed persons were calculated for each month by region. (See table 2.)

Statistical Procedures. Descriptive statistics include the frequency of workplace homicides by event, the frequency of such homicides by geographic region, and the monthly average occupational homicide rates. An Analysis of Variance (ANOVA) procedure was performed to determine if there is a significant difference in the occupational homicide rates based upon the geographic region of the United States. The average monthly rates for each region were calculated using the number of workplace homicides each month divided by the number of persons employed. The ANOVA model tested the null hypothesis that the average monthly rates are equal among regions for the 4-year period. Tukey HSD post hoc tests were performed to determine if significant differences exist between the pairs-wise comparisons.

A Pearson Product-Moment Correlation procedure was performed using the monthly average workplace homicide rates and the monthly unemployment rates. A t-test was used to determine if the obtained correlation coefficient was significant.

Results

Over the period from January 1, 1997 to December 31, 2000, there were 2,902 occupational homicides, with shootings accounting for four-fifths of them. (See table 3.) The South Region experienced the greatest frequency of workplace homicides with 1,360, which accounted for approximately 47 percent of all such fatalities. The Northeast Region accounted

for the fewest such fatalities with 409, which accounted for approximately 14 percent of the total. A summary of occupational homicides by region appears in table 4.

An examination of the average monthly occupational homicide rates for 1997 to 2000, indicated that the South Region experienced the highest rate, with .059 deaths per 100,000 employed persons and the Midwest Region experienced the lowest rate, with .033 deaths per 100,000 employed persons. The overall average monthly workplace homicide rate for the United States was .041 deaths per 100,000 persons employed. (See table 5.) The monthly average occupational homicide rates ranged from a high of .078 deaths per 100,000 employed persons in the South Region occurring in July to a low of .020 deaths per 100,000 employed persons in the Midwest Region for the month of June.

The ANOVA procedure identified significant differences in the average monthly occupational homicide rates based upon geographic region. (See table 6.) Tukey HSD post hoc tests confirmed significant differences in the pairs-wise comparisons of such rates for the regions. A summary of the significant differences appears in table 7. Overall, the South Region had significantly higher average workplace homicide rates than the other regions, followed by the West Region. The Midwest and Northeast regions had rates significantly lower than those of the West region, but they were not significantly different from each other.

The Pearson Correlation procedure was performed to determine if there is a significant relationship between unemployment rates and occupational homicide rates. Monthly unemployment rates for the regions were correlated with the monthly occupational homicide rates for the four-year analysis period. A significant correlation coefficient of .258 (P < .000) indicating that a relationship exists between unemployment and occupational homicides. Increases and decreases in unemployment rates were positively correlated to increases and decreases in the occupational homicide rates. The scatter diagram in chart 1 depicts the relationship between the monthly occupational homicide rates and the unemployment rates.

Discussion

Workplace violence continues to be one of the leading causes of on-the-job fatalities. Two factors--regional location in the United States and unemployment levels--appear to have significant impact upon the occurrence of occupational homicides. In terms of monthly average workplace homicide rates, the South Region has significantly higher rates than any other region in the United States. The South Region is followed by the West Region, which has significantly lower rates than the South, but which has significantly higher rates than the Midwest and Northeast Regions.

In this study, unemployment rates were found to be key variables related to the monthly occupational homicide rates. The economic conditions--as measured by increases and decreases in unemployment--may be related to the workplace homicide rates. As unemployment increases, the occurrence of certain crimes such as robbery could also be expected to increase. Because workplace homicides account for a notable proportion of all occupational fatalities, and because the motive behind a large percentage of such homicides is robbery, the fluctuations in homicide rates may be an indication of the changes in economic conditions.

In summary, combining the geographic regions with their respective unemployment levels served as a significant method for predicting workplace homicide rates. From an occupational fatality prevention standpoint, during periods of high unemployment, this information could be used to direct prevention measures emphasizing the highest risks for fatal assaults in the South, followed by the West, Midwest, and Northeast.

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Notes

[1] *Fatal Workplace Injuries in 2000: A Collection of Data and Analysis*, Report 961 (Bureau of Labor Statistics, September 2002), Table A-11. The 2000 data were the latest available when this article was drafted.

[2] *Ibid*.

3 Eric F. Sygnatur and Guy A. Toscano, "Work-related Homicides: The Facts," *Compensation and Working Conditions*, Spring 2000, pp. 3-7; see table 1, p. 7.

4 Sygnatur and Toscano, "Work-related Homicides," p. 4.

5 *Ibid*.p.4

6 Guy A. Toscano and William Weber, "Violence in the Workplace," *Compensation and Working Conditions*, April 1995, pp. 1-8.

7 *Ibid*., pp. 1, 3.

8 These regions are based on those of the Census Bureau and are defined as follows: *Northeast*: Connecticut, Maine, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, and Vermont; *South*: Alabama, Arkansas, Delaware, District of Columbia, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, Virginia, and West Virginia; *Midwest*: Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, South Dakota, and Wisconsin; *West*: Alaska, Arizona, California, Colorado, Hawaii, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Wyoming, and Washington. For more information, see the Census of Fatal Occupational Injuries "Research File User Reference," (Bureau of Labor Statistics, 2000).

9 *Criminal Victimization 2000* (Bureau of Justice Statistics, 2001).

10 See, for example, Robert Crutchfield, "Labor Markets, Employment, and Crime," *NIJ Research Preview* (National Institute of Justice, July 1997).

11 J. D. Perry and M. E. Simpson, "Violent Crimes in a City: Environmental Determinants," *Environment and Behavior*, January 1987, pp. 77-90.

12 David Cantor and Kenneth C. Land, "Unemployment and Crime Rates in the Post-World War II United States: A Theoretical and Empirical Analysis," *American Sociological Review*, June 1985, pp. 317-32. The authors summarize previous research in pp. 317-18.

13 *Ibid*., pp. 319-21.

14 Steven Raphael and Rudolf Winter-Ebmer, "Identifying the Effect of Unemployment on Crime," *Journal of Law and Economics*, April 2001, pp. 259-83.

15 See note 8 for definitions of the regions. For more information, see the Census of Fatal Occupational Injuries "Research File User Reference," (Bureau of Labor Statistics, 2000).

Table 1. State composition of regions

Region	States
Northeast	CT, ME, MA, NH, NJ, NY, PA, RI, VT
Midwest	IL, IN, IA, KS, MI, MN, MO, NE, ND, OH, SD, WI
South	AL, AR, DE, DC, FL, GA, KY, LA, MD, MS, NC, OK, SC, TN, TX, VA, WV
West	AK, AZ, CA, CO, HI, ID, MT, NV, NM, OR, UT, WA, WY

Table 2. Work-related homicides (per 100,000 persons employed), 1997–2000

Region	Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Average
Northeast	1997	0.054	0.027	0.035	0.027	0.031	0.030	0.045	0.045	0.031	0.042	0.034	0.038	0.037
	1998	0.070	0.039	0.042	0.035	0.019	0.019	0.019	0.042	0.011	0.023	0.019	0.031	0.031
	1999	0.039	0.042	0.027	0.015	0.019	0.042	0.022	0.034	0.054	0.030	0.015	0.019	0.030
	2000	0.023	0.034	0.023	0.050	0.046	0.004	0.030	0.041	0.008	0.027	0.034	0.076	0.033
	Average	0.047	0.036	0.032	0.032	0.029	0.024	0.029	0.041	0.026	0.031	0.026	0.041	0.033
Midwest	1997	0.056	0.034	0.052	0.034	0.037	0.015	0.024	0.039	0.039	0.036	0.039	0.054	0.038
	1998	0.040	0.021	0.046	0.031	0.036	0.015	0.033	0.036	0.024	0.021	0.033	0.033	0.031

Region	Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Average
	1999	0.055	0.015	0.021	0.036	0.030	0.029	0.015	0.033	0.018	0.036	0.030	0.024	0.029
	2000	0.033	0.027	0.045	0.030	0.018	0.020	0.026	0.015	0.041	0.024	0.038	0.029	0.029
	Average	0.046	0.024	0.041	0.033	0.030	0.020	0.025	0.031	0.031	0.029	0.035	0.035	0.032
South	1997	0.087	0.060	0.090	0.077	0.049	0.063	0.090	0.076	0.063	0.048	0.050	0.080	0.069
	1998	0.090	0.049	0.062	0.053	0.069	0.039	0.072	0.050	0.056	0.056	0.054	0.052	0.059
	1999	0.051	0.025	0.052	0.044	0.050	0.039	0.086	0.051	0.051	0.059	0.035	0.076	0.052
	2000	0.052	0.055	0.066	0.035	0.057	0.066	0.062	0.068	0.033	0.061	0.050	0.069	0.056
	Average	0.070	0.047	0.068	0.052	0.056	0.052	0.078	0.061	0.051	0.056	0.047	0.069	0.059
West	1997	0.068	0.034	0.071	0.044	0.040	0.060	0.059	0.046	0.056	0.056	0.053	0.069	0.055
	1998	0.089	0.033	0.040	0.033	0.059	0.039	0.022	0.045	0.019	0.042	0.061	0.039	0.043
	1999	0.062	0.029	0.045	0.036	0.022	0.029	0.028	0.029	0.041	0.041	0.057	0.032	0.038
	2000	0.022	0.025	0.022	0.035	0.035	0.037	0.034	0.050	0.034	0.031	0.022	0.041	0.032
	Average	0.060	0.030	0.045	0.037	0.039	0.041	0.036	0.043	0.038	0.043	0.048	0.045	0.042

Table 3. Summary of work-related homicides, 1997-2000

Event	Frequency	Percent
Shooting	2,324	80.1
Stabbing	262	9.0
Hitting, kicking, beating	181	6.2
Assaults and violent acts by person(s), n.e.c.	114	3.9
Assaults and violent acts by person(s), Unspecified	21	0.7
Total	2,902	100
NOTE: Percents do not sum to exactly 100.0 percent due to rounding.		

Table 4. Frequency of work-related homicides, 1997-2000

Region	1997	1998	1999	2000	Total
Northeast	115	96	94	104	409
Midwest	151	122	114	117	504
South	393	335	300	332	1,360
West	201	161	143	124	629
Total	860	714	651	677	2,902

Table 5. Average monthly number of work-related homicides per 100,000 employed persons by region

	Mean	Standard deviation	Standard error	95-percent confidence interval for mean		Minimum	Maximum
				Lower bound	Upper bound		
Northeast	0.03255	0.014360	0.002073	0.02838	0.03672	0.004	0.076
Midwest	0.03157	0.010840	0.001565	0.02843	0.03472	0.015	0.056
South	0.05891	0.015556	0.002245	0.05440	0.06343	0.025	0.090
West	0.04205	0.015447	0.002230	0.03757	0.04654	0.019	0.089
Total	0.04127	0.017861	0.001289	0.03873	0.04382	0.004	0.090

Table 6. Analysis of variance: average monthly work-related homicide rates by region

	Sum of squares	Degrees of freedom	Mean square	F-statistic	Significance
Between Groups	0.023	3	0.008	38.344	0.000
Within Groups	0.038	188	0.000		
Total	0.061	191			

Table 7. Post hoc tests: Tukey HSD

(I) REGION	(J) REGION	Mean Difference (I-J)	Significance
Northeast	Midwest	0.00098	0.987
	South	-0.02636	*0.000
	West	-0.00950	*0.007
Midwest	Northeast	-0.00098	0.987
	South	-0.02734	*0.000
	West	-0.01048	*0.002
South	Northeast	0.02636	*0.000
	Midwest	0.02734	*0.000
	West	0.01686	*0.000
West	Northeast	0.00950	*0.007
	Midwest	0.01048	*0.002
	South	-0.01686	*0.000

* The mean difference is significant at the .05 level.

Chart 1. Scatter plot of monthly unemployment rates by monthly homicide rates: 1997-2000
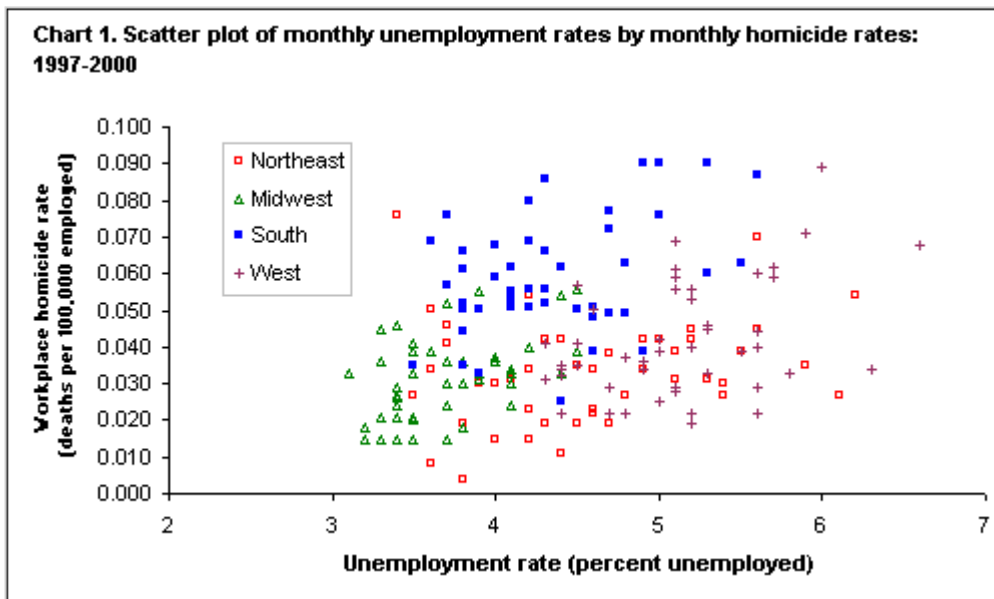
Data for Chart 1. Scatter plot of monthly unemployment rates by monthly homicide rates: 1997-2000

Month	Region	Deaths per 100,000 persons employed	Unemployment rate
Jan-97	Northeast	0.054	6.2
Feb-97	Northeast	0.027	6.1
Mar-97	Northeast	0.035	5.9
Apr-97	Northeast	0.027	5.4
May-97	Northeast	0.031	5.3
Jun-97	Northeast	0.030	5.4
Jul-97	Northeast	0.045	5.6
Aug-97	Northeast	0.045	5.2
Sep-97	Northeast	0.031	5.1
Oct-97	Northeast	0.042	4.9
Nov-97	Northeast	0.034	4.9
Dec-97	Northeast	0.038	4.7
Jan-98	Northeast	0.070	5.6
Feb-98	Northeast	0.039	5.5
Mar-98	Northeast	0.042	5.2
Apr-98	Northeast	0.035	4.5
May-98	Northeast	0.019	4.5
Jun-98	Northeast	0.019	4.5
Jul-98	Northeast	0.019	4.7
Aug-98	Northeast	0.042	4.3
Sep-98	Northeast	0.011	4.4
Oct-98	Northeast	0.023	4.2
Nov-98	Northeast	0.019	4.3
Dec-98	Northeast	0.031	4.1
Jan-99	Northeast	0.039	5.1
Feb-99	Northeast	0.042	5.0
Mar-99	Northeast	0.027	4.8
Apr-99	Northeast	0.015	4.2
May-99	Northeast	0.019	4.3
Jun-99	Northeast	0.042	4.4
Jul-99	Northeast	0.022	4.6
Aug-99	Northeast	0.034	4.2
Sep-99	Northeast	0.054	4.2
Oct-99	Northeast	0.030	4.0
Nov-99	Northeast	0.015	4.0
Dec-99	Northeast	0.019	3.8
Jan-00	Northeast	0.023	4.6
Feb-00	Northeast	0.034	4.6
Mar-00	Northeast	0.023	4.2
Apr-00	Northeast	0.050	3.6
May-00	Northeast	0.046	3.7
Jun-00	Northeast	0.004	3.8

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Month	Region	Deaths per 100,000 persons employed	Unemployment rate
Jul-00	Northeast	0.030	3.9
Aug-00	Northeast	0.041	3.7
Sep-00	Northeast	0.008	3.6
Oct-00	Northeast	0.027	3.5
Nov-00	Northeast	0.034	3.6
Dec-00	Northeast	0.076	3.4
Jan-97	Midwest	0.056	5.1
Feb-97	Midwest	0.034	4.8
Mar-97	Midwest	0.052	4.5
Apr-97	Midwest	0.034	4.1
May-97	Midwest	0.037	3.7
Jun-97	Midwest	0.015	4.1
Jul-97	Midwest	0.024	4.0
Aug-97	Midwest	0.039	3.7
Sep-97	Midwest	0.039	3.7
Oct-97	Midwest	0.036	3.5
Nov-97	Midwest	0.039	3.6
Dec-97	Midwest	0.054	3.7
Jan-98	Midwest	0.040	4.5
Feb-98	Midwest	0.021	4.4
Mar-98	Midwest	0.046	4.2
Apr-98	Midwest	0.031	3.5
May-98	Midwest	0.036	3.4
Jun-98	Midwest	0.015	3.9
Jul-98	Midwest	0.033	4.0
Aug-98	Midwest	0.036	3.5
Sep-98	Midwest	0.024	3.5
Oct-98	Midwest	0.021	3.3
Nov-98	Midwest	0.033	3.4
Dec-98	Midwest	0.033	3.4
Jan-99	Midwest	0.055	4.4
Feb-99	Midwest	0.015	4.1
Mar-99	Midwest	0.021	3.9
Apr-99	Midwest	0.036	3.4
May-99	Midwest	0.030	3.3
Jun-99	Midwest	0.029	3.8
Jul-99	Midwest	0.015	3.7
Aug-99	Midwest	0.033	3.4
Sep-99	Midwest	0.018	3.3
Oct-99	Midwest	0.036	3.1
Nov-99	Midwest	0.030	3.2
Dec-99	Midwest	0.024	3.3
Jan-00	Midwest	0.033	4.1
Feb-00	Midwest	0.027	4.1

Month	Region	Deaths per 100,000 persons employed	Unemployment rate
Mar-00	Midwest	0.045	3.9
Apr-00	Midwest	0.030	3.4
May-00	Midwest	0.018	3.3
Jun-00	Midwest	0.020	3.8
Jul-00	Midwest	0.026	3.8
Aug-00	Midwest	0.015	3.5
Sep-00	Midwest	0.041	3.4
Oct-00	Midwest	0.024	3.2
Nov-00	Midwest	0.038	3.5
Dec-00	Midwest	0.029	3.7
Jan-97	South	0.087	5.6
Feb-97	South	0.060	5.3
Mar-97	South	0.090	4.9
Apr-97	South	0.077	4.7
May-97	South	0.049	4.8
Jun-97	South	0.063	5.5
Jul-97	South	0.090	5.3
Aug-97	South	0.076	5.0
Sep-97	South	0.063	4.8
Oct-97	South	0.048	4.6
Nov-97	South	0.050	4.5
Dec-97	South	0.080	4.2
Jan-98	South	0.090	5.0
Feb-98	South	0.049	4.7
Mar-98	South	0.062	4.4
Apr-98	South	0.053	4.1
May-98	South	0.069	4.2
Jun-98	South	0.039	4.9
Jul-98	South	0.072	4.7
Aug-98	South	0.050	4.5
Sep-98	South	0.056	4.3
Oct-98	South	0.056	4.2
Nov-98	South	0.054	4.1
Dec-98	South	0.052	3.8
Jan-99	South	0.051	4.6
Feb-99	South	0.025	4.4
Mar-99	South	0.052	4.1
Apr-99	South	0.044	3.8
May-99	South	0.050	3.9
Jun-99	South	0.039	4.6
Jul-99	South	0.086	4.3
Aug-99	South	0.051	4.2
Sep-99	South	0.051	4.1
Oct-99	South	0.059	4.0

Month	Region	Deaths per 100,000 persons employed	Unemployment rate
Nov-99	South	0.035	3.8
Dec-99	South	0.076	3.7
Jan-00	South	0.052	4.3
Feb-00	South	0.055	4.1
Mar-00	South	0.066	3.8
Apr-00	South	0.035	3.5
May-00	South	0.057	3.7
Jun-00	South	0.066	4.3
Jul-00	South	0.062	4.1
Aug-00	South	0.068	4.0
Sep-00	South	0.033	3.9
Oct-00	South	0.061	3.8
Nov-00	South	0.050	3.8
Dec-00	South	0.069	3.6
Jan-97	West	0.068	6.6
Feb-97	West	0.034	6.3
Mar-97	West	0.071	5.9
Apr-97	West	0.044	5.6
May-97	West	0.040	5.2
Jun-97	West	0.060	5.6
Jul-97	West	0.059	5.7
Aug-97	West	0.046	5.3
Sep-97	West	0.056	5.2
Oct-97	West	0.056	5.1
Nov-97	West	0.053	5.2
Dec-97	West	0.069	5.1
Jan-98	West	0.089	6.0
Feb-98	West	0.033	5.8
Mar-98	West	0.040	5.6
Apr-98	West	0.033	5.3
May-98	West	0.059	5.1
Jun-98	West	0.039	5.5
Jul-98	West	0.022	5.6
Aug-98	West	0.045	5.3
Sep-98	West	0.019	5.2
Oct-98	West	0.042	5.0
Nov-98	West	0.061	5.1
Dec-98	West	0.039	5.0
Jan-99	West	0.062	5.7
Feb-99	West	0.029	5.6
Mar-99	West	0.045	5.3
Apr-99	West	0.036	4.9
May-99	West	0.022	4.7
Jun-99	West	0.029	5.1

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Month	Region	Deaths per 100,000 persons employed	Unemployment rate
Jul-99	West	0.028	5.1
Aug-99	West	0.029	4.7
Sep-99	West	0.041	4.5
Oct-99	West	0.041	4.5
Nov-99	West	0.057	4.5
Dec-99	West	0.032	4.4
Jan-00	West	0.022	5.2
Feb-00	West	0.025	5.0
Mar-00	West	0.022	4.8
Apr-00	West	0.035	4.5
May-00	West	0.035	4.4
Jun-00	West	0.037	4.8
Jul-00	West	0.034	4.9
Aug-00	West	0.050	4.6
Sep-00	West	0.034	4.4
Oct-00	West	0.031	4.3
Nov-00	West	0.022	4.4
Dec-00	West	0.041	4.3