

Foreign-born workers: trends in fatal occupational injuries, 1996–2001

Workplace fatalities among foreign-born workers reflect the large influx of those workers into the U.S. workforce and their employment in occupations and industries with inherently higher risks of fatal injury

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New immigrants who arrived in the United States during the 1990–2001 period accounted for 50.3 percent of the growth in the Nation’s civilian labor force.¹ That is, one out of every two net new labor force participants during this period was a new foreign immigrant. Historically, Current Population Survey (CPS) figures show that foreign-born workers, who accounted for 1 in every 17 workers in 1960, increased their share of the labor force to one in eight by 2000.²

As the share of foreign-born employment has increased, so has the share of fatal occupational injuries to foreign-born workers. Yet, while the share of foreign-born employment increased by 22 percent from 1996 to 2000³ the share of fatal occupational injuries for this population increased by 43 percent. This increase in fatal work injuries among foreign-born workers occurred at a time when the overall number of fatal occupational injuries to U.S. workers declined by 5 percent. As a result, the fatality rate for foreign-born workers has not mirrored the improvement seen in the overall fatality rate over this period. In 2001, the fatality rate for all U.S. workers decreased to a series low of 4.3 per 100,000 workers, but the fatality rate for foreign-born workers recorded a series high of 5.7 per 100,000 workers.

Foreign-born workers are disproportionately represented in occupations and industries with higher risks of fatality.⁴ Lower levels of educational attainment and lack of English language proficiency may limit employment options for many foreign-born workers. The U.S. Census Bureau reported that in 2000 33 percent of the foreign-born population aged 25 and older did

not have a high school diploma, compared with 13 percent of the native-born population.⁵ And, according to the National Immigration Forum, more than 40 percent of new immigrants in 1990 stated that they did not speak English well.⁶ These fractions are even higher among the Latin American foreign-born who represent about half of the foreign-born workers in the United States. Low educational attainment, lack of English proficiency, and other factors contribute to employment of many foreign-born workers in lower paying,⁷ higher risk jobs.⁸

Methods

This study examines Bureau of Labor Statistics surveillance data from 1996 through 2001 to identify current trends in fatal work injuries among foreign-born workers. To classify the fatal work injury records for this study, we define the term “foreign-born” simply as persons not born in the United States. Persons born in Puerto Rico, Guam, the U.S. Virgin Islands, and other U.S. territories were not included in the foreign-born workplace fatality count. The foreign-born population includes legal immigrants, legal non-immigrants (for example, refugees and persons on student or work visas), and undocumented persons residing in the United States.

The Bureau of Labor Statistics conducts the Census of Fatal Occupational Injuries (CFOI) program, which collects detailed information on all work-related fatal injuries in the United States. Included are private wage and salary workers, public sector employees—both civilian and mili-

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tary—and self-employed workers. To ensure a complete count and to collect the required data for each case, a multiple source document collection system is employed. Each fatality is verified using at least two source documents, such as death certificates, medical examiners or coroner reports, State and Federal Workers' Compensation fatality reports, news media accounts, Occupational Safety and Health (OSHA) reports, or other sources. Historically, each fatality has averaged nearly four source documents. More than 30 data elements are collected through the CFOI program. Included in the results are demographic data such as the work status of the decedent (wage or salary worker, or self-employed), gender, age, and race or ethnic origin, and employment data, such as occupation and industry. Other data elements include the event or exposure that led to the injury, the source of the injury, and the activity and location of the worker during the time of the incident.

This study includes all fatal occupational injuries recorded by CFOI for which the element ("foreign birth place") was positively coded by the entry of the name of the country of birth into the field. For some records, only the region of origin was known, in which case that region was coded. "Unknown/not reported" cases were those in which the "foreign birth place" field was positively coded, but the precise country or region of origin was not clear from the narrative entry. Such cases were also included in the overall foreign-born worker fatality count. The foreign birth place narratives were then alphanumerically coded into country variables, or into general regional variables (for example, Asia, Africa, Europe, Latin America, Oceania, and Northern America) according to Census Bureau classifications for country and regional analysis.⁹

All fatality rates are expressed as number of fatalities per 100,000 employed persons. Because the fatality census does not collect employment data, fatality rates were calculated using estimates of employed civilian workers (aged 16 and older) from the CPS combined with resident military figures obtained from the Department of Defense. The CPS is a monthly random sample of 60,000 households that represents the entire noninstitutionalized civilian population of the United States. However, there are some limitations to these fatality rates: 1) the rates are based on employment regardless of hours worked; 2) the CPS classifies occupation based on the primary job worked, which may not be the job the decedent was performing when fatally injured; and 3) because the CPS is a survey rather than a census, data from the CPS are subject to sampling error. Also, CPS industry employment data were subdivided by major industry division for wage and salary workers, but not for self-employed workers. Due to this limitation, the industry fatality rates calculated for this study as well as all comparisons in the industry section (later presented) between shares of employment and shares of fatal work injuries refer only to foreign-born wage and salary workers (who ac-

count for 93 percent of all foreign-born workers).¹⁰

In addition, the CPS uses the Census Bureau definition of "foreign-born" and "native-born," which has a slightly different meaning than the definition employed by the CFOI. The Census Bureau defines foreign-born persons as those who were not U.S. citizens at birth, and "native-born persons" as those who were U.S. citizens at birth. The Census-defined native-born population includes persons who were born in one of the 50 States or the District of Columbia, persons born in one of the U.S. island territories, and persons born abroad to a U.S. citizen. According to the census in 2000, 0.7 percent of the U.S. population can be classified in the latter category of the native-born population, and as such, there may be slight inconsistencies in the nativity classification assigned to a fatally-injured worker by CFOI and by the CPS.¹¹ Some error may be introduced in the calculation of fatality rates due to this difference.

The 1987 Standard Industrial Classification (SIC) system is the basis for industry classifications for the CPS and the CFOI during the 1996–2001 period.¹² Occupations were classified according to the Bureau of the Census' 1990 Occupational Classification system. All injury characteristics (type of event, source of injury, part of body, and nature of injury) were classified using the Occupational Injury and Illness Classification structure developed by BLS.

Foreign-born worker fatalities

During 1996–2001, there were a total of 4,751 fatal work injuries involving foreign-born workers, accounting for 13 percent of the fatal occupational injuries recorded in the United States. Though foreign-born employment has increased both in number and as a share of total U.S. employment over this period, the foreign-born employment share has increased at a slower rate than the foreign-born share of occupational fatalities. (See table 1.) Even as fatal occupational injuries to all U.S. workers have declined, workplace fatalities to foreign-born workers have been on the rise. The fatality rate for foreign-born workers had a decreasing trend in the first half

Table 1. Fatal occupational injuries in the United States, 1996–2001

Year	All workers	Native-born	Foreign-born
Total	36,384	31,633	4,751
1996	6,202	5,474	728
1997	6,238	5,523	715
1998	6,055	5,402	653
1999	6,054	5,244	810
2000	5,920	5,069	851
2001	5,915	4,921	994

SOURCE: Bureau of Labor Statistics, Census of Fatal Occupational Injuries, 1996–2001.

of the study period, but during the second half of the period, the rate increased from 4.3 in 1998 to 5.7 in 2001. (See chart 1.)

Fatal work injuries involving foreign-born workers were primarily concentrated in six States: California, Texas, Florida, New York, Illinois, and New Jersey. These six States also had the largest foreign-born populations. Sixty percent of all fatally-injured foreign-born workers were of Latin American origin, of which two-thirds were Mexican-born. In addition, 21 percent of foreign-born fatalities involved workers of Asian origin, and another 12 percent were of European origin.

Country and region of origin

Region of origin The share of workplace fatalities borne by workers of each world region of origin generally resembled their employment shares in 2000 (the only year for which foreign-born employment data by region of origin are available), though some disparities were observed. (See table 2.)

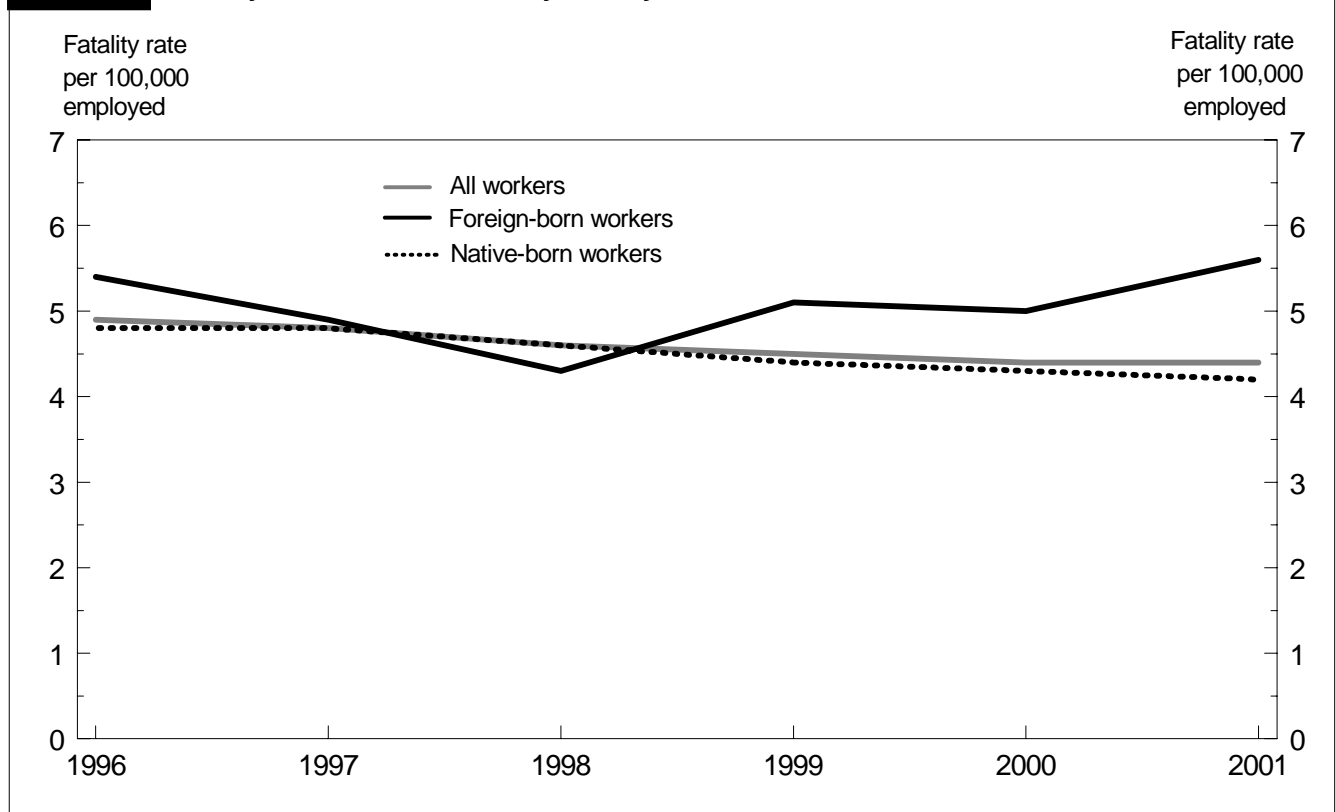
Latin American-born workers, the largest group of foreign-born workers with respect to employment, also were the largest group of fatally-injured foreign-born workers with 60 percent, or 2,851 fatally-injured workers. About two-thirds of fatally-injured Latin American workers were born in Mexico. Mexican-born-worker fatalities as a share of total foreign-born

worker fatalities (42 percent) in 2000 was disproportionately high relative to their share of foreign-born employment (27 percent) that year.

The second largest group of fatally-injured foreign-born workers was originally from Asia, with 21 percent (993) of all foreign-born worker fatalities over the 1996–2001 period. (See table 2.) European-born workers had the third largest share of occupational fatalities among foreign-born workers, with one in eight fatalities (591) to foreign-born workers, and African-born workers composed the fourth largest group of fatally-injured foreign-born workers, with 156 fatalities.

Country of origin. Sixty-four percent of all fatalities to foreign-born workers occurred to those originating from just 10 countries. (See table 3.) Mexican-born-worker fatalities alone accounted for 40 percent (1,915) of all fatalities to foreign-born workers, and fatal work injuries to Mexican-born workers were uniquely observed to trend upward over the duration of the 6-year period under analysis, increasing from a low of 241 fatalities in 1996 to 422 in 2001. Three of the other nine countries also were Latin American countries: Cuba (153 fatal work injuries), El Salvador (129), and Guatemala (104). Another three were Asian countries, including India (170), Korea (140), and Vietnam (125). Canadian-born workers were the

Chart 1. Fatality rate of U.S. workers by nativity, 1996–2001



sixth largest national group, with 125 fatalities. Poland and Germany, the 2 European countries among the 10, had 89 fatalities each.

Occupation

Among foreign-born workers, the four occupational groups with the highest fatality rates over the 1996-2001 period were transportation and material moving occupations with a rate of 22.1 per 100,000, handlers, equipment cleaners, helpers and laborers (17.1 per 100,000), protective services (11.4 per 100,000), and construction trades (11.3 per 100,000). Almost half of all fatally-injured foreign-born workers were employed in those four occupations.

The share of Mexican-born workers fatally injured in farming, forestry and fishing occupations was higher than the share for workers from all other regions of origin. Fatalities in that occupational group represented almost a quarter of all fatal

injuries sustained by Mexican-born workers. Workers employed in two other occupational groups—handlers, equipment cleaners, helpers and laborers occupations and construction trades—represented another 41 percent of fatally-injured Mexican-born workers. Fatally-injured workers from all other Latin American countries (which include countries in Central America other than Mexico, in the Caribbean, and in South America) were most frequently employed as handlers, equipment cleaners, helpers, or laborers, followed by transportation and material movers, and workers in construction trades.

Fatally injured Asian-born workers were most frequently employed in sales occupations; transportation and material moving occupations; and executive, administrative, and managerial occupations. Three-quarters of all fatally injured African-born workers also were employed in the same three occupations, though fatalities among those employed in transportation and material moving occupations were more frequent than sales occupations. (See table 4.)

Overall, foreign-born workers experienced different patterns in fatality rates than native-born workers in certain occupational groups. Foreign-born workers in sales occupations and handler, equipment cleaner, helper, and laborer occupations consistently experienced a higher annual fatality rate than their native-born counterparts, although both groups experienced overall declining fatality rates during the 6-year period. The fatality rate of foreign-born workers in sales occupations decreased from 9.2 per 100,000 in 1996 to 6.1 per 100,000 in 2001 (with a low of 4.7 per 100,000 in 1998), and the rate of their native-born counterparts decreased from 2.8 per 100,000 to 2.0 per 100,000 (with a low of 1.9 per 100,000 in 1999 and 2000). In handler, equipment cleaner, helper, and laborer occupations, foreign-born workers' fatality rate decreased from 19.8 per 100,000 in 1996 to 16.6 per 100,000 in 2001 (with a low of 14.8 per 100,000 in 2000), and the rate for native-born workers went from 11.7 per 100,000 to 10.9 per 100,000 (with a high of 12.6 per

Table 2. Share of foreign-born employment and fatalities to workers aged 16 or older by region of origin, 2000

Region of origin	Share of employment	Share of fatalities
Number	16,532,000	851
Percent	100	100
Latin America	51.6	61.2
Caribbean	9.6	7.4
Central America	34.9	48.5
Mexico	27.3	42.1
Other Central America	7.6	6.5
South America	7.1	5.3
Asia	26.0	22.2
Europe	14.1	10.7
Africa	2.6	3.2
Northern America	2.4	2.5

SOURCE: U.S. Bureau of the Census, March 2000, the Bureau of Labor Statistics Current Population Survey and Census of Fatal Occupational Injuries, 2000.

Table 3. Fatal occupational injuries to foreign-born workers by country of origin, primary State, and primary fatal event, 1996-2001

Country	Number	Percent	Primary States	Primary fatal event (percent in parenthesis)
Total	4,751	100	CA, TX	Homicides (25)
Mexico	1,915	40.3	CA, TX	Fall to lower level (19)
India	170	3.6	CA, TX	Homicide (65)
Cuba	153	3.2	FL	Homicide (29)
Korea	140	2.9	CA	Homicide (60)
El Salvador	129	2.7	CA	Fall to lower level (24)
Canada	125	2.6	CA	Highway incidents (28)
Vietnam	125	2.6	CA, TX	Homicide (37)
Guatemala	104	2.2	CA	Highway incidents (18)
Germany	89	1.9	—	Aircraft (17)
Poland	89	1.9	NY, IL	Falls to lower level (28)

NOTE: Dash indicates that there was no primary State within the specified category.

SOURCE: Bureau of Labor Statistics, Census of Fatal Occupational Injuries, 1996-2001

Table 4. Percent distribution of fatal work injuries to foreign-born workers by occupation, region of origin, and overall foreign-born fatality rate, 1996–2001

Occupation	Total foreign-born	Latin America						Asia	Europe	Africa	North America	Overall foreign-born fatality rate
		Total	Caribbean	Central America			South America					
				Total	Mexico	Other Central America						
Number	4,751	2,851	397	2,257	1,915	342	197	993	591	156	125	5.1
Percent	100	100	100	100	100	100	100	100	100	100	100	...
Managerial and professional specialty	8.2	3.8	8.1	2.5	2.5	2.9	9.1	14.4	15.7	16.0	15.2	1.8
Executive, administrative, and management	5.5	2.5	5.3	1.8	1.7	2.6	4.6	10.7	9.3	11.5	6.4	2.7
Professional specialty	2.7	1.3	2.8	.7	.8	—	4.6	3.7	6.4	4.5	8.8	1.0
Technical, sales, and administrative support	14.7	6.2	20.7	3.5	3.0	6.1	8.6	40.4	10.2	29.5	11.2	3.5
Technicians and related support	1.4	.6	1.8	.4	.3	—	—	1.6	3.9	—	6.4	2.6
Sales	12.4	4.9	17.1	2.7	2.5	3.8	5.6	36.8	5.9	28.2	—	6.4
Administrative support, including clerical	1.0	.7	1.8	.4	.3	1.5	—	2.0	—	—	—	.5
Service	6.7	6.9	10.8	6.1	5.3	10.5	8.1	6.7	7.3	3.2	—	1.8
Private household .....	.3	.2	—	.3	—	—	—	—	—	—	—	.8
Protective service	1.9	1.9	3.8	1.6	1.1	4.1	—	1.8	1.7	—	—	11.4
Service, other	4.6	4.7	7.1	4.2	3.9	5.8	6.1	4.5	5.1	—	—	1.4
Precision production, craft, and repair	18.0	20.4	18.9	20.6	20.2	23.4	20.3	7.6	25.7	3.2	25.6	7.5
Mechanics and repairers	4.0	4.3	6.0	3.9	3.9	3.8	6.6	2.3	5.4	—	6.4	6.6
Construction trades	11.4	13.5	10.3	14.3	13.7	17.8	11.2	2.7	16.8	—	15.2	11.3
Other precision, production, craft, and repair	2.6	2.5	2.5	2.5	2.6	1.8	2.5	2.5	3.6	—	4.0	3.3
Operators, fabricators, and laborers	37.8	43.9	36.8	44.7	44.6	45.0	49.7	24.5	29.9	45.5	36.0	10.2
Machine operators, assemblers, and inspectors	3.9	5.0	3.5	5.4	5.4	5.0	4.1	2.3	2.7	—	—	2.0
Transportation and material moving	15.7	14.1	20.7	11.9	11.9	12.3	25.4	15.1	16.6	35.3	28.8	22.1
Handlers, equipment cleaners, helpers, and laborers	18.2	24.9	12.6	27.4	27.4	27.8	20.3	7.0	10.7	7.7	6.4	17.1
Farming, forestry, and fishing	13.0	18.0	3.8	21.8	23.8	10.5	3.6	4.5	6.9	—	8.8	14.8

NOTE: Dash indicates no data reported or data do not meet publication criteria.

SOURCE: Bureau of Labor Statistics, Current Population Survey and Census of Fatal Occupational Injuries, 1996–2001.

100,000 in 1998). Among farming, forestry, and fishing occupations, native-born workers had a higher but roughly stable fatality rate throughout the 6-year period, compared with foreign-born workers. However, foreign-born workers' fatality rate rose from 12.6 per 100,000 to 19.5 per 100,000 during that period, approaching the native-born rate.

Industry

Private construction, retail trade, and transportation and public utilities were the three industries in which fatally injured foreign-born workers were most frequently employed. (See table 5.)¹³ Nearly one in four fatally-injured foreign-born workers was employed in the construction industry. Another one

in three was employed in either retail trade or transportation and public utilities. Of these three industries, two were also among the industries that had the highest rates of fatality among foreign-born workers—construction (17.3 per 100,000) and transportation and public utilities (15.2 per 100,000). Mining (with 30.4 per 100,000) and agriculture, forestry, and fishing (15.2 per 100,000) also had high fatality rates among foreign-born workers.

The employment distribution of fatally-injured foreign-born workers differed considerably when dissected by region or country of origin. Among fatally-injured Mexican-born workers, more than a third were employed in the construction industry. Another 23 percent were employed in the agriculture, forestry, and fishing industry, followed by manufacturing (11

percent). In contrast, the 936 fatally-injured workers who were born in Latin American countries other than Mexico were most frequently employed in construction, transportation and public utilities, and services. (See table 6.)

Among fatally-injured Asian-born workers, retail trade recorded the highest number of fatal work injuries, with almost one out of every two killed in that sector. Fatally-injured European-born workers and Northern American-born workers had similar employment distributions, with transportation and pub-

lic utilities, construction, and services accounting for the highest numbers of fatalities. Fatally-injured African-born workers were heavily concentrated in two industries, with more than 70 percent employed in either transportation and public utilities or retail trade. (See table 6.)

Overall, the share of fatal work injuries to foreign-born workers grew in those industries in which their share of employment also grew. However, in particular industries, there were notable disparities between foreign-born workers' share of employment and share of fatal work injuries. Whereas foreign-born workers' share of total agriculture, forestry, and fishing employment varied little around an average of 28 percent, their share of fatal work injuries rose by 60 percent, from one in five agriculture, forestry, and fishing fatalities in 1996 to one in three in 2001. In manufacturing, foreign-born workers' share of employment increased by 22 percent, from 13 percent in 1996 to 16 percent in 2001, but their share of workplace fatalities increased by 46 percent over the same period, from 9 percent to 14 percent. In other industries, specifically construction, transportation and public utilities, and retail trade, foreign-born workers' share of fatalities was consistently higher than their share of employment over the 6-year period. (See chart 2.)

Event or exposure

Workplace homicide was the leading manner of traumatic work-

Table 5. Percent distribution of fatal occupational injuries by industry and nativity, 1996–2001

Industry	All workers	Native-born	Foreign-born
Number	36,384	31,633	4,751
Percent	100	100	100
Agriculture, forestry, and fishing	13.1	13.1	12.8
Mining	2.5	2.7	1.2
Construction	19.0	18.2	24.0
Manufacturing	11.4	11.8	9.2
Transportation and public utilities	15.9	16.0	14.9
Wholesale trade	3.9	4.0	3.1
Retail trade	9.8	8.6	18.0
Finance, insurance, and real estate	1.6	1.6	1.4
Services	12.5	12.6	12.0
Government	9.9	10.9	2.9

SOURCE: Bureau of Labor Statistics, Current Population Survey, and Census of Fatal Occupational Injuries, 1996–2001.

Table 6. Percent distribution of fatal occupational injuries to foreign-born workers by industry and region of origin, 1996–2001

Industry	Total foreign-born	Latin America						Asia	Africa	Europe	North America
		Total	Caribbean	Central America			South America				
				Total	Mexico	Other Central America					
Number	4,751	2,851	397	2,257	1,915	342	197	993	591	156	125
Percent	100	100	100	100	100	100	100	100	100	100	100
Agriculture, forestry, and fishing	12.8	17.8	4.0	21.4	23.4	9.9	4.1	4.3	6.8	—	9.6
Mining	1.2	1.6	—	2.0	2.2	—	—	—	—	—	—
Construction	24.0	31.4	16.4	34.2	34.2	34.2	28.9	5.3	26.1	3.8	20.0
Manufacturing	9.2	10.4	7.8	11.0	11.0	11.1	8.1	5.8	10.3	4.5	8.8
Transportation and public utilities	14.9	11.9	19.6	9.3	8.5	14.0	25.4	15.2	19.3	37.2	31.2
Wholesale trade	3.1	3.4	3.0	3.7	3.4	5.0	—	2.6	3.0	—	—
Retail trade	18.0	9.2	22.4	6.5	6.3	7.3	13.7	47.6	9.8	34.0	4.8
Finance, insurance, and real estate	1.4	1.2	3.3	.8	.8	—	—	2.0	1.9	—	—
Services	12.0	11.0	17.9	9.4	8.4	15.5	14.7	13.4	13.2	10.3	16.8
Government	2.9	1.6	4.0	1.2	1.4	—	—	3.2	8.8	—	—

NOTE: Dash indicates no data reported or data do not meet publication criteria.

SOURCE: Bureau of Labor Statistics, Census of Fatal Occupational Injuries, 1996–2001.

Chart 2. Foreign-born wage and salary workers aged 16 and older, as a share of total employment and total fatal work injuries, by industry, 1996–2001

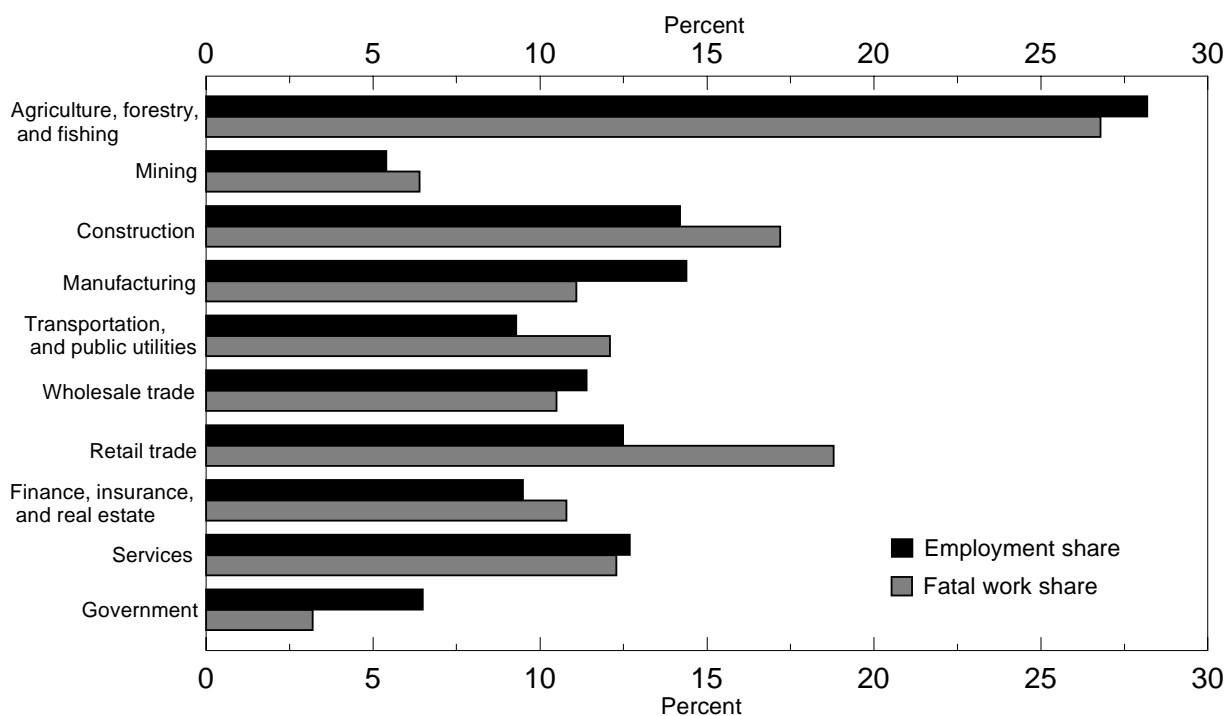


Table 7. Percent distribution of fatal occupational injuries by event and nativity, 1996–2001

Event	All workers	Native-born	Foreign-born
Number	36,384	31,633	4,751
Percent	100	100	100
Transportation incidents	42.8	44.8	29.3
Highway incidents	23.2	24.6	13.9
Pedestrian struck by vehicle, mobile equipment	6.2	6.2	6.3
Nonhighway incidents	6.1	6.5	3.5
Assaults and violent acts	16.4	14.7	28.4
Homicides	12.3	10.5	24.5
Self-inflicted injury	3.6	3.6	3.3
Contact with objects and equipment	16.5	16.6	15.2
Struck by object	9.3	9.5	8.0
Caught in or compressed by equipment or objects	4.8	4.7	4.9
Falls	12.0	11.4	16.0
Falls to lower level	10.7	10.0	15.0
Exposure to harmful substance or environments	8.7	8.8	8.4
Electrocution	4.8	4.8	4.3
Fires and explosions	3.2	3.3	2.6

SOURCE: Bureau of Labor Statistics, Census of Fatal Occupational Injuries, 1996–2001.

place death for foreign-born workers, accounting for one out of every four fatal injuries. The second and third most frequent types of fatal events involving foreign-born workers were falls to a lower level (15 percent) and highway incidents (14 percent). The distribution of fatal events for foreign-born workers was different than the distribution of fatal events for all U.S. workers. (See table 7.) Overall, U.S. workers were far

more likely to be fatally-injured in highway incidents (23 percent), followed by homicides (12 percent) and fatal falls to a lower level (11 percent).

The 1,166 workplace homicides involving foreign-born workers represented about a quarter of the total recorded for all U.S. workers over the study period. One contributing factor in this high incidence of work-related homicide is the fact

that the foreign-born population is overwhelmingly concentrated in metropolitan areas,¹⁴ which have three times the violent crime rate of rural areas.¹⁵ Among the foreign-born, workers born in Mexico recorded the highest number of fatal workplace assaults, though fatal assaults represented only about 10 percent of the fatal events for Mexican-born workers. Workplace homicide was the primary fatal event for workers born in India, Cuba, Korea, and Vietnam. (See table 8.)

Falls to a lower level, the second most frequent type of fatal event for foreign-born workers, accounted for 714 fatal injuries. The number of fatal falls to a lower level involving foreign-born workers increased every year from 1997 to 2001, and the total for 2001 represented a 73-percent increase over the total recorded in 1997. The highest number of fatal falls to a lower level (3 in 10) involved falls from roofs. Another 19 percent were falls from scaffolding or staging, and 14 percent were falls from ladders. Half of the foreign-born workers who were killed by falls to a lower level (359) were born in Mexico, and this fatal event was the leading manner of traumatic work-

place death for Mexican-born workers over the study period.

Highway incidents accounted for 657 fatal events or 14 percent of the fatal incidents involving foreign-born workers over the study period. The number of highway-related fatalities also increased, rising from a low of 84 fatalities in 1997 to a high of 148 in 2001. Highway incidents were the most frequent type of fatal event for workers born in Canada and Guatemala.

A total of 381 workers (8 percent) were killed as a result of being struck by an object, primarily falling objects, and another 298 workers (6 percent) were killed as a result of being struck by a vehicle or mobile equipment. For both of these fatal events, the percentage of fatalities for foreign-born workers was about the same as for all U.S. workers.

Clearly, the type of fatal events involving foreign-born workers varied according to the decedent's country and region of origin. The primary fatal event for workers originally from Asia or Africa was homicide, and the primary fatal event of Latin American-born workers was falls to a lower level. The primary fatal events of European- and Canadian-born work-

Table 8. Number and percent of fatal work injuries to foreign-born workers by country of origin (100 or more fatal injuries) and selected events, 1996–2001

Country	Number	Percent	Selected fatal event (percent)		
			Highway incidents	Falls to a lower level	Homicides
All U.S. workers	36,384	100	23	11	12
All foreign-born workers	4,751	100	14	15	25
Mexico	1,915	100	16	19	10
India	170	100	14	5	65
Cuba	153	100	10	14	29
Korea	140	100	9	5	60
El Salvador	129	100	10	24	19
Canada	125	100	28	14	6
Vietnam	125	100	10	10	37
Guatemala	104	100	18	16	14

SOURCE: Bureau of Labor Statistics, Census of Fatal Occupational Injuries, 1996–2001.

Table 9. Fatal occupational injuries to foreign-born workers by region of origin, primary State, and primary fatal event, 1996–2001

Region of origin	Number	Percent	Primary States	Primary fatal event (percent in parenthesis)
Total	4,751	100	CA, TX, FL	Homicide (25)
Latin America	2,851	60.0	CA, TX, FL	Fall to lower level (18)
Caribbean	397	8.4	FL, NY	Homicide (39)
Central America	2,257	47.5	CA, TX	Fall to lower level (19)
Mexico	1,915	40.3	CA, TX	Fall to lower level (19)
South America	197	4.1	NY, FL	Fall to lower level (22)
Asia	993	20.9	CA, TX	Homicide (55)
Europe	591	12.4	NY	Fall to lower level (18)
Africa	156	3.3	—	Homicide (59)
Northern America	125	2.6	—	Highway incidents (28)
Oceania	18	.4	—	—

NOTE: There were 17 fatally-injured foreign-born workers whose country of origin was unknown or not reported. Dash indicates that there was no primary State or event within the specified category.

SOURCE: Bureau of Labor Statistics, Census of Fatal Occupational Injuries, 1996–2001.

ers were falls to a lower level and highway incidents, respectively. (See table 9.)

Demographics

Employee status. Over the 6-year study period, 3,875 fatalities to wage and salary foreign-born workers were recorded, or 82 percent of all fatalities to foreign-born workers. This worker group experienced a fatality rate of 4.5 per 100,000—15 percent higher than that of native-born workers (3.9 per 100,000). Self-employed workers composed 18 percent (876) of all fatally-injured foreign-born workers, and had a fatality rate of 12.8 per 100,000—13 percent higher than the rate for native-born workers similarly employed.

Gender. The three most frequent fatal events for male foreign-born workers were homicides (23 percent), falls to lower level (16 percent), and highway incidents (14 percent). Among female workers, nearly half of all workplace fatalities were due to homicide. Highway incidents (16 percent) and struck by vehicle or mobile equipment (7 percent) were the second and third most frequent fatal events for foreign-born women. These differences in event patterns reflect, in part, the varying employment patterns between foreign-born men and women and thus varying occupational dangers facing them. Female workers are more concentrated in technical, administrative, and sales occupations and service occupations and in retail trade and services industries—industries known to have higher risk of workplace homicide.¹⁶

Age. Overall, about 40 percent of fatally-injured foreign-born workers were under 35 years of age, compared with 30 percent for native-born workers, reflecting differences in the age distributions of the two populations. Within the foreign-born population, the Latin American-born segment had a median age of 32.6, according to the U.S. Census Bureau, and nearly one out of every two fatally-injured Latin American-born workers was under age 35. However, only one in four fatally injured European-born workers was under 35, reflect-

ing an older population whose median age was 50.0.¹⁷

State and Census-designated region

State. Fatal work injuries in 6 States accounted for 64 percent (3,048) of all fatalities to foreign-born workers. As mentioned earlier, those states—California, Texas, Florida, New York, Illinois and New Jersey—were also the 6 states with the largest foreign-born populations.¹⁸ Nearly 3 out of every 10 workplace fatalities in California and New York were incurred by foreign-born workers. Fatal injuries to foreign-born workers accounted for a quarter of all fatal occupational injuries sustained by workers in Florida, and in Texas, that figure was one in five.

California recorded the highest number of fatalities to foreign-born workers (1,037). One out of every five fatalities to foreign-born workers occurred in California over the study period. (See table 10.) More than a third of all fatal work injuries to foreign-born workers in the agriculture, forestry, and fishing industry occurred in California. The region of origin of foreign-born workers with the highest number of fatal work injuries was Latin America, with 70 percent, or 727 fatalities, of which 617 of those were from Mexico. Workers originally from Asia were the second largest regional group, with 230 fatal work injuries, or 22 percent, of the foreign-born worker fatalities in California.

Census-designated region. Even though the South did not possess the largest share of foreign-born workers, it held the largest share of foreign-born worker fatalities, with 37 percent of all fatalities to foreign-born workers over the 6-year study period. This fact is partially the result of the South's geographical proximity to two of the major contributors of foreign-born workers to the United States—Mexico and Cuba. The West had the second largest number of foreign-born worker fatalities, with almost 1,600 fatalities, 65 percent of which occurred in California alone. Fatal work injuries in the agriculture, forestry, and fishing industry were the primary contributor to the fatality count for foreign-born workers in the West. (See table 11.)

Table 10. Fatal occupational injuries to all workers and foreign-born workers by State and primary country of origin, 1996–2001

State	All workers	Foreign-born (percent of total in parenthesis)	Primary country of origin (percent in parenthesis)
California	3,588	1,037 (29)	Mexico (59)
Texas	3,072	643 (21)	Mexico (68)
Florida	2,125	514 (24)	Cuba (24), Mexico (21)
New York	1,518	464 (31)	Dominican Republic (12)
Illinois	1,363	212 (16)	Mexico (41)
New Jersey	652	178 (27)	Mexico (9)

SOURCE: Bureau of Labor Statistics, Census of Fatal Occupational Injuries, 1996–2001.

Table 11. Fatal occupational injuries to foreign-born workers by region, State, primary industry, and primary fatal event, 1996–2001

Region and State	Number	Primary industry (percent in parenthesis)	Primary fatal event (percent in parenthesis)
Northeast	862	Construction (25)	Homicides (32)
New York	464	Construction (26)	Homicides (40)
New Jersey	178	Construction (30)	Falls to lower level (24)
Midwest	519	Retail trade (23)	Homicides (29)
Illinois	212	Construction (21)	Homicide (28)
South	1,773	Construction (31)	Homicides (24)
Florida	514	Construction (23)	Homicides (26)
Texas	643	Construction (35)	Homicides (23)
West	1,584	Agriculture, forestry, and fishing (20)	Homicides, highway incidents (both 20)
California	1,037	Agriculture, forestry, and fishing (22)	Homicides (24)

NOTE: A total of 13 work-related fatalities occurred in areas that were not attributable to a specific State or region, and are therefore not included in the areas above.

SOURCE: Bureau of Labor Statistics, Census of Fatal Occupational Injuries, 1996–2001

Table 12. Relative risk of fatal occupational injury among all civilian workers aged 16 and older, by occupation and nativity, 1996–2001

[All workers = 1.00]

Occupation	All workers	Native-born	Foreign-born
Total	1.00	0.99	1.11
Managerial and professional specialty .....	.36	.36	.38
Executive, administrative, and management .....	.46	.45	.59
Professional specialty .....	.27	.27	.23
Technical, sales, and administrative support .....	.39	.35	.76
Technicians and related support .....	.86	.89	.57
Sales .....	.57	.48	1.40
Administrative support, including clerical .....	.12	.12	.12
Service .....	.58	.62	.39
Private household .....	.16	.15	.18
Protective service	2.45	2.45	2.48
Service, other .....	.30	.30	.30
Precision, production, craft, and repair	1.68	1.69	1.64
Mechanics and repairers	1.42	1.42	1.43
Construction trades	2.38	2.37	2.47
Other precision, production, craft, and repair .....	.98	1.03	.73
Operators, fabricators, and laborers	2.55	2.61	2.23
Machine operators, assemblers, and inspectors .....	.64	.69	.45
Transportation and material moving	4.99	5.01	4.82
Handlers, equipment cleaners, helpers, and laborers	2.73	2.54	3.74
Farming, forestry and fishing	5.45	6.01	3.24

SOURCE: Bureau of Labor Statistics, Current Population Survey, and Census of Fatal Occupational Injuries, 1996–2001.

Fatality risk

The relative fatality risk for a group of workers is calculated as the fatality rate for that group divided by the fatality rate for all workers.¹⁹ Relative risk measures how much the workplace fatality rate of a specific worker group differs from the workplace fatality rate of all workers.

The foreign-born workforce as a whole experienced a relative fatality risk of 1.11, compared with the relative risk of 0.99 for native-born workers. It is specifically the impact of a few occupations—specifically sales occupations and handler, equipment cleaner, helper, and laborer occupations—that contribute to the difference between the overall workplace fatality

experience of foreign-born workers and native-born workers. (See table 12.)

Perhaps the most telling frame of the foreign-born labor scene is the fatality rates and relative risks of foreign-born workers by their regions of origin. (See table 13.) If the numbers from the year 2000 are a representative snapshot of the foreign-born workforce and their collective workplace environment, then a significant point arises. Based on 2000 census and CFOI data, the occupational risks to foreign-born workers were shared unevenly by workers of different regional groups.²⁰ Reflecting occupational patterns as well as other factors, workers from Latin America, Africa, and Northern America had fatality rates higher than the overall rate of 4.3 per

Table 13. Fatality rate and relative risk by region of origin for foreign-born workers aged 16 or older, 2000

Region of origin	Fatality rate	Relative risk
All workers	4.36	1.00
Total foreign born	5.14	1.18
Latin America	6.10	1.40
Caribbean	3.97	.91
Central America	7.14	1.64
Mexico	7.92	1.82
Other Central America ...	4.37	1.00
South America	3.85	.88
Asia	4.39	1.01
Europe	3.92	.90
Africa	6.21	1.42
Northern America	5.22	1.20

SOURCE: U.S. Census Bureau, 2000; Bureau of Labor Statistics Current Population Survey, and Census of Fatal Occupational Injuries, 2000.

100,000 for all U.S. workers in 2000.

Among Latin American-born workers, Mexican-born workers faced a fatality rate of 7.92 per 100,000, and a relative risk of 1.82. Mexican-born workers experienced a higher relative fatality risk than workers originally from the Caribbean, South America, or even other countries within Central America. Mexican-born workers represented 42 percent of fatal work injuries to foreign-born workers in 2000, but only 27 percent of total foreign-born employment that year.

Notes

¹ See Andrew Sum, and others, “Immigrant Workers and the Great American Job Machine: The Contribution of New Foreign Immigration to National and Regional Labor Force Growth in the 1990s,” (Northeastern University, Center for Labor Market Studies, August 2002). This study includes in its definition of foreign-born population those persons born in Puerto Rico, Guam, and the U.S. Virgin Islands, contrary to the U.S. Census Bureau practices. Although they do raise the number of new foreign immigrants, their inclusion, as stated by the study’s authors, “does not have a large effect on overall estimates of the number of new foreign immigrants arriving in the U.S. during the 1990–2000 period, since they...[accounted] for only 2.7% of the total number of new foreign immigrants.”

² See Abraham T. Mosisa, “The Role of Foreign-born Workers in the U.S. Economy,” *Monthly Labor Review*, May 2002, pp. 3–14, available on the Internet at www.bls.gov/opub/mlr/2002/05/contents.htm.

³ Foreign-born employment figures stated and used in fatality rate calculations throughout the article, except those detailing region of origin, were derived from unpublished employment tables from the Current Population Survey (CPS). The CPS is a monthly survey conducted by the Bureau of the Census for the Bureau of Labor Statistics. The data on foreign-born employment by region of origin were obtained from the U.S. Census Bureau. For more information, see A. Dianne Schmidley, “Profile of the Foreign-born Population in the United States: 2000,” *Current Population Reports Series P23-306* (Washington, DC, U.S. Census Bureau, December 2001). The report can also be found on the Internet at: <http://www.census.gov/prod/2002pubs/p23-206.pdf>.

⁴ See Scott Richardson and others, “Hispanic Workers in the United

Conclusion

The upward trend in workplace fatalities among foreign-born workers over the 1996–2001 period reflects the large influx of foreign-born workers, many of whom obtained employment in occupations and industries with inherently higher risks of fatal injury. Several factors are relevant to this observation, including lower levels of educational attainment among Latin American-born workers, who compose 60 percent of total foreign-born population aged 25 and older, lower levels of English proficiency, and the concentration of the foreign-born population in metropolitan areas.²¹

In light of this information, in particular, the relative risk of foreign-born workers by their regions of origin, future research could examine the workplace situation of these workers, with a special emphasis on Mexican-born workers. Detailed employment data at the country-specific level and documented over several years could be used to assemble a more complete and comparative profile of foreign-born workers and Mexican-born workers relative to the U.S. workforce as a whole. Industry employment data by employee status (class of worker) also would be beneficial to the study of foreign-born-worker fatalities. Finally, nonfatal injury data would be useful in composing a clear picture of the overall workplace safety landscape of foreign-born workers. □

States: An Analysis of Employment Distributions, Fatal Occupational Injuries, and Non-fatal Occupational Injuries and Illnesses,” in *Safety is Seguridad* (Washington, DC, National Research Council of the National Academies, 2003).

⁵ See Mosisa, Abraham, “The role of foreign-born workers in the U.S. economy,” *Monthly Labor Review*, May 2002, pp. 3–14 and Schmidley, “Profile of the Foreign-born Population,” 2001, <http://www.census.gov/prod/2002pubs/p23-206.pdf>.

⁶ See Gregory Rodriguez, “From Newcomers to New Americans: The Successful Integration of Immigrants into American Society” (Washington, DC, National Immigration Forum, July 1999).

⁷ See Mosisa, “Role of foreign-born workers,” 2002 and Schmidley, “Profile of the Foreign-born Population,” 2001, <http://www.census.gov/prod/2002pubs/p23-206.pdf>.

⁸ See Richardson and others, “Hispanic Workers in the United States,” 2003.

⁹ For a complete listing of world regional classifications, please see the code list developed by the U.S. Census Bureau, available online at <http://www.census.gov/acs/www/UseData/CodeList/ACS/2000/Pob.htm>.

¹⁰ For more information about the CPS, please visit the CPS page on the BLS Web site at www.bls.gov/cps.

¹¹ On the Internet at: <http://www.census.gov/population/socdemo/foreign/ppl-145/tab01-1.pdf>.

¹² Because these data cover the 1996–2001 period, they are not affected by the conversion to the North American Industry Classification System (NAICS).

¹³ Figures stated in this section for the number or percent distribution of fatal work injuries to foreign-born workers represent both wage and salary workers and self-employed workers. However, due to the limitation of the employment data available from the CPS, fatality rates in this section are calculated for wage and salary workers only. Likewise, comparisons drawn in this section between foreign-born shares of employment and shares of fatal work injuries are also stated for wage and salary workers only. Wage and salary workers account for 93 percent of all foreign-born workers.

¹⁴ See Schmidley, "Profile of the Foreign-born Population," 2001, <http://www.census.gov/prod/2002pubs/p23-206.pdf>.

¹⁵ See Sonia M. Pérez, "Beyond the Census: Hispanics and an American Agenda," (Washington, DC, National Council of La Raza, August 2001), available on the Internet at http://www.nclr.org/policy/census/census_report01_part_I.pdf.

¹⁶ For more information on workplace assaults, please see Scott Richardson and Janice Windau, "Fatal and nonfatal assaults in the workplace, 1996 to 2000," *Clinics in Occupational and Environmental Medicine*, vol. 3, 2003, pp. 673–89.

¹⁷ See Schmidley, "Profile of the Foreign-born Population," 2001,

<http://www.census.gov/prod/2002pubs/p23-206.pdf>.

¹⁸ See Schmidley, "Profile of the Foreign-born Population," 2001 <http://www.census.gov/prod/2002pubs/p23-206.pdf>.

¹⁹ For example, suppose the fatality rate over a given period for all workers in all occupations is 5.0. If the fatality rate for all workers employed in occupation X over the same period is 10.0, then the relative risk of fatality for workers in that occupation is $10.0/5.0 = 2.0$. In other words, the fatality rate of workers employed in occupation X is twice as high as the fatality rate for all workers. As another example, suppose the fatality rate for foreign-born workers in occupation X is 12.0. Then their relative risk is $12.0/5.0 = 2.4$.

²⁰ Foreign-born employment data detailing occupational employment by world region of origin were obtained from the U.S. Census Bureau, and can be found in the additional tables accompanying Schmidley, "Profile of the Foreign-born Population," 2001 at <http://www.census.gov/population/socdemo/foreign/pp1-145/tab16-1A.pdf>.

²¹ See Schmidley, "Profile of the Foreign-born Population," 2001, <http://www.census.gov/prod/2002pubs/p23-206.pdf>.