

**FIRE IN THE U.S. AND SWEDEN**

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## FIRE IN THE U.S. AND SWEDEN, 2002

	U.S.	Sweden
Fire Incidents	1,687,500	27,000
Deaths*	3,426	137
Property Damage	\$10.3 billion \$15.5 billion**	3.7 billion krona**
Population (resident)	288,369,000	8,950,000
Area (square miles)	3,620,000	174,000
Gross Domestic Product	\$10.38 trillion	2.34 trillion krona

\*Civilians and firefighters killed at fires.

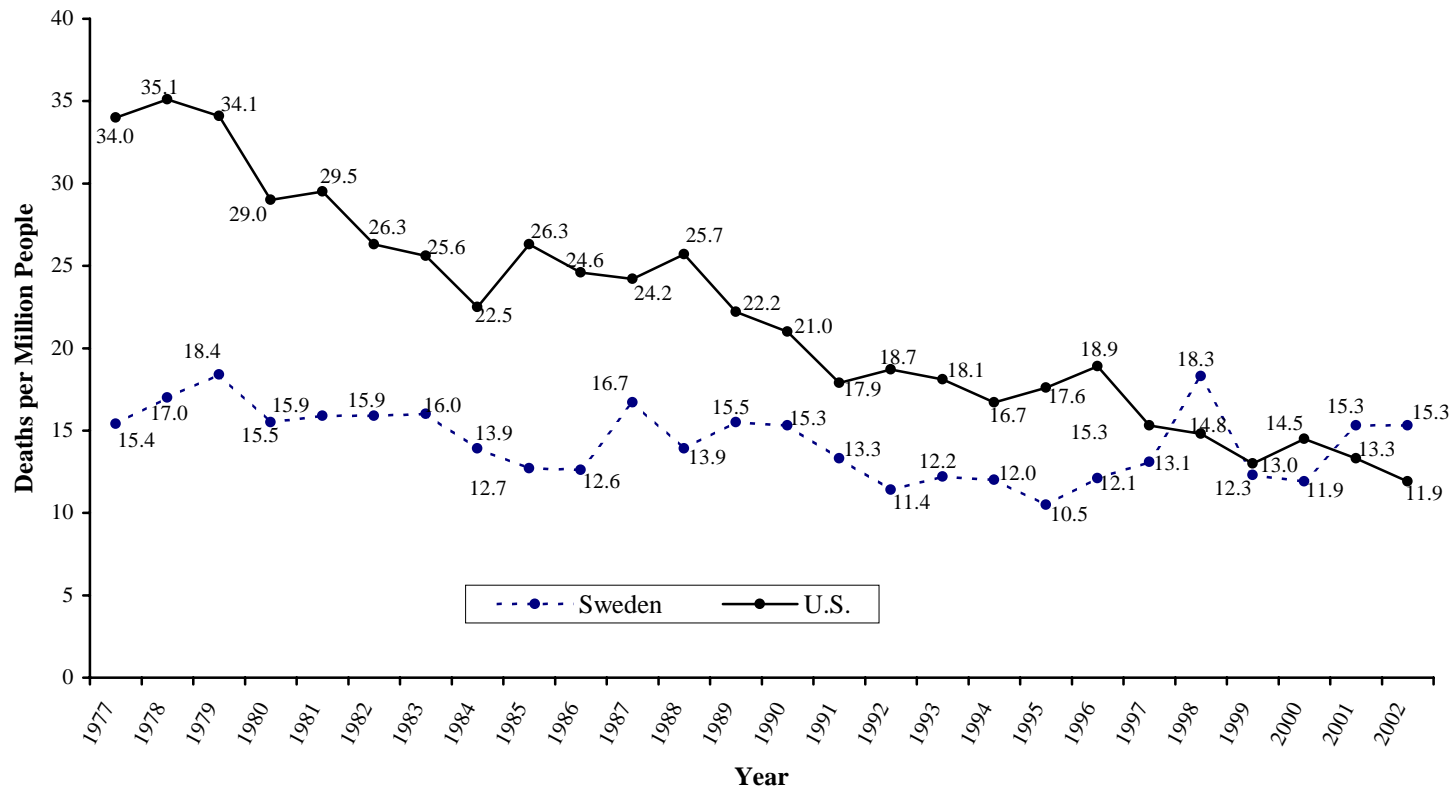
\*\*These figures are from the insurance industry of the U.S. or Sweden, as appropriate. All other U.S. fire statistics are NFPA estimates based on information from fire department reports.

The United States (U.S.) has a population 32 times as large as Sweden's in an area 21 times as large. In 2002, the U.S. experienced 63 times as many reported fires as Sweden. It is likely that part of the difference in the higher U.S. rate is due to differences in reporting of vehicle and outdoor fires. These accounted for 60 percent of Sweden's reported 2002 fires but 69 percent of reported 2002 fires in the U.S.

In 2002, the U.S. also suffered 25 times as many fire deaths (including fire fighters killed at fires) as did Sweden.

Based on the 2002 exchange rate of 9.721 krona to the dollar, the U.S. economy, measured by gross domestic product (GDP), was 43 times as large as Sweden's. U.S. property losses to fires were 29 to 43 times as large as Sweden's in 2002, depending on whether one uses fire department estimates for the U.S. (as is usually done in the U.S.) or insurance industry estimates (as is done in Sweden). Thus, fire damages represented a larger or equal share of economic activity in Sweden than in the U.S., depending on use of fire service vs. insurance loss estimates.

### Fire Death Rates, U.S. and Sweden



Source: NFPA and Swedish Fire Protection Association analysis.

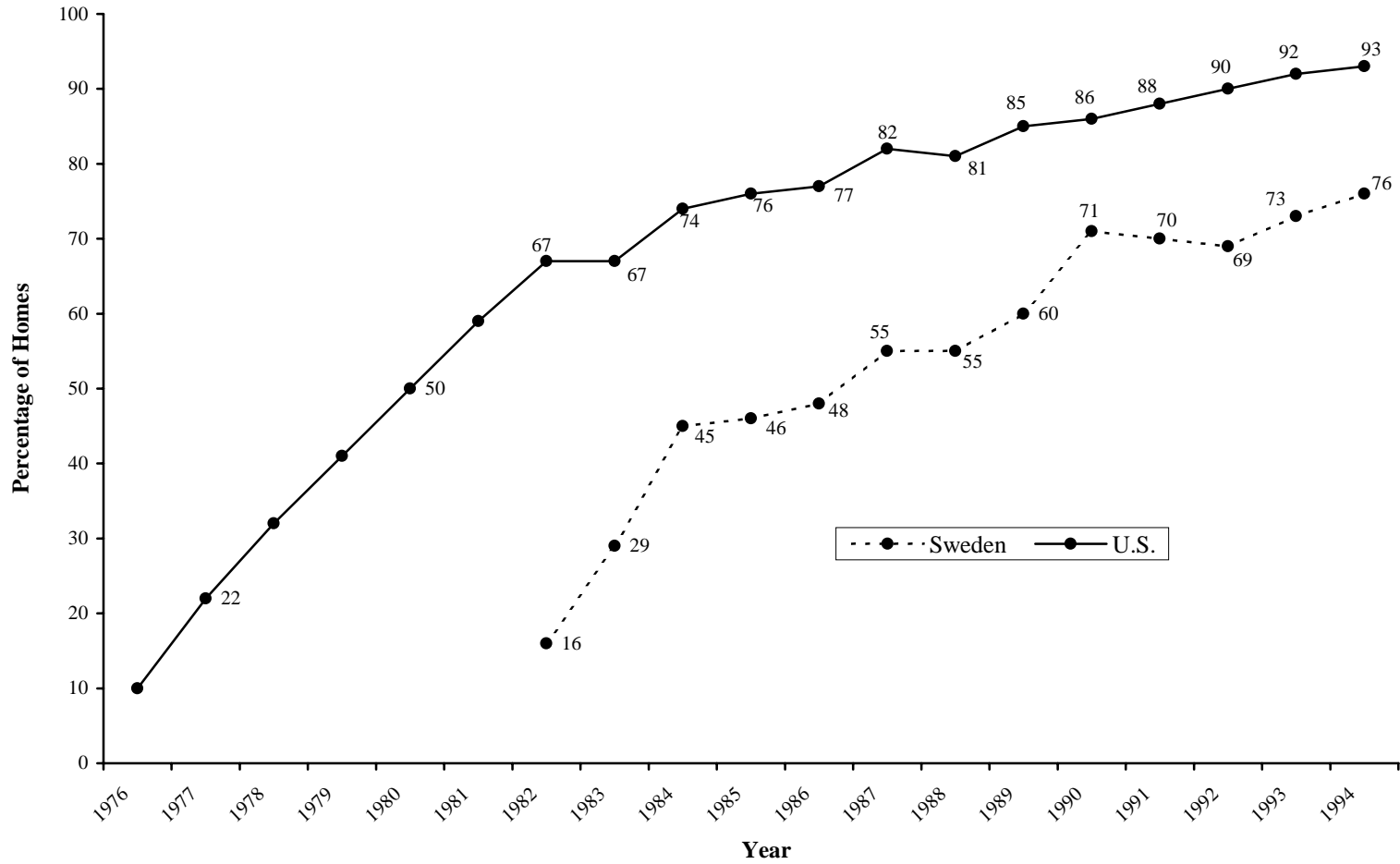
Note: Rates include firefighter deaths at fires. U.S. 2001 rate excludes events of 9/11/01.

Sweden's fire death rates are no longer lower than those in the U.S. During the five-year period of 1977-1981, U.S. fire death rates were roughly twice the rates in Sweden. During the next five-year period of 1982-1986, U.S. fire death rates were three-fourths higher than the rates in Sweden. In 1990-1994, U.S. fire death rates were less than 1-1/2 times the rates in Sweden. In 1998, 2001 and 2002, the U.S. fire death rate was lower than the Sweden rate, as was the average rate for 1998-2002, excluding the catastrophic loss of life in the events of September 11, 2001.

Roughly one-fourth to one-third of all Sweden's fire deaths each year (where the cause was known) have been due to smoking materials, including lighted tobacco products and associated lighting implements. (It was 42% in 2003.) In the U.S., the corresponding share for all fire deaths (including structures, vehicles, and other properties) has been roughly one-fifth to one-fourth, but smoking (even without lighting implements) remains the leading cause of U.S. fire deaths. Sweden's fire fatality cause patterns suggest great success in educating fire-safe behavior in all areas except one that is among the hardest to change, that is, the use of tobacco.

Sweden's fire death rate patterns relative to victim age differ somewhat from those in the U.S. Preschool children in Sweden have much higher fire death rates than other children but still below the national average. In the U.S., fire death rates for preschool children have been well above the national average, although this relative risk index has been dropping in recent years, coincident with the introduction of the national rule on child-resistant lighters. U.S. adults age 75 or over have a fire death rate three times the overall average. In Sweden, adults over age 70 have a fire death rate roughly two-and-a-half times the Swedish national average. In recent years, more than half the fatal fire victims in Sweden have been 60 years old or older. In the U.S., that share has been less than one-third.

### Home Smoke Alarms, U.S. and Sweden

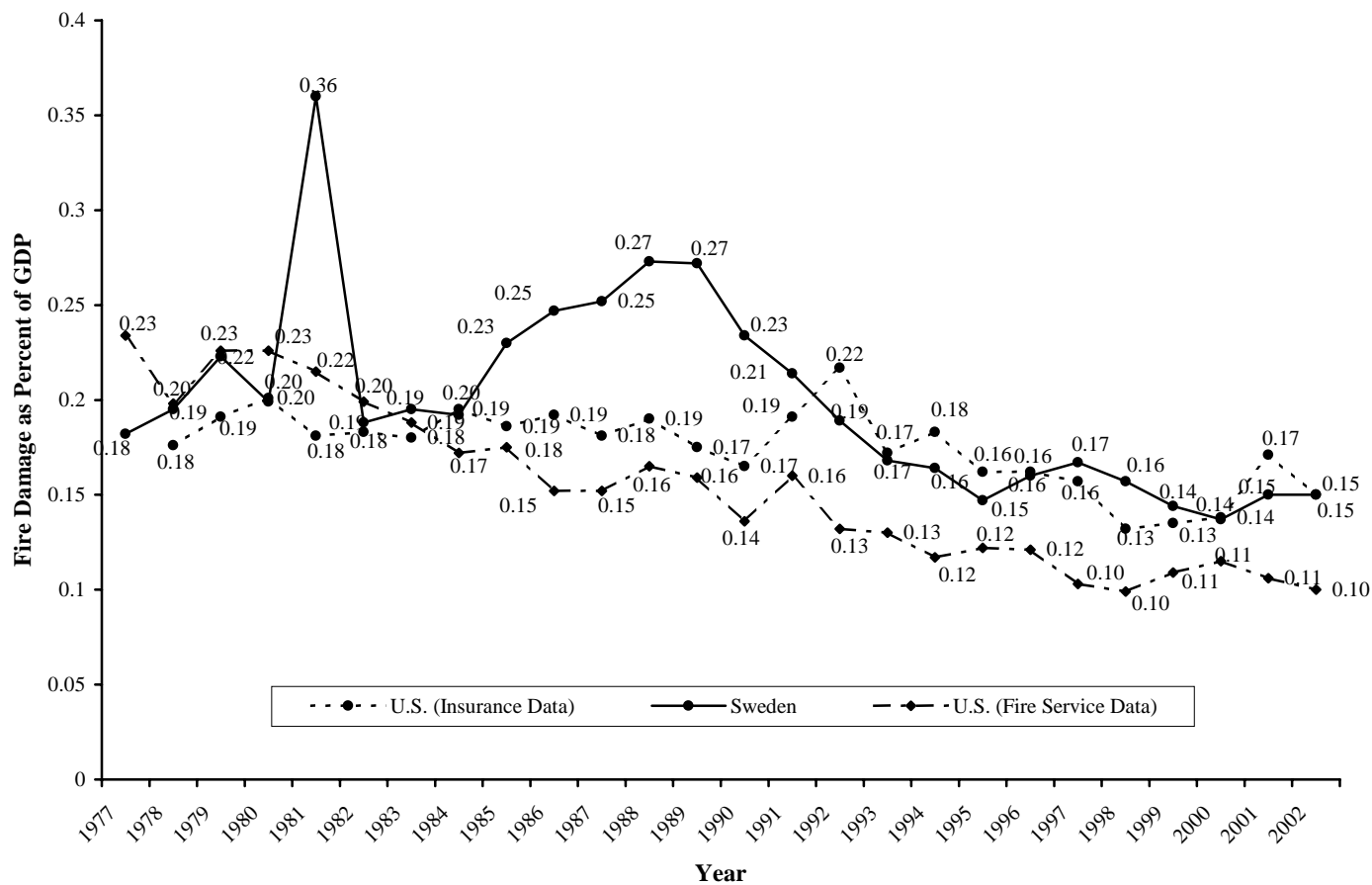


Source: NFPA and Swedish Fire Protection Association analysis.

Fire safety programs in both countries heavily promote the use of home smoke alarms. Home smoke alarm usage began to grow rapidly in the mid-1970s in the U.S. and in the early 1980s in Sweden. Usage statistics have been available only intermittently since 1994 in both countries, but they show the U.S. percentage leveling off at around 95% and the Sweden percentage leveling off at around 75%.

Smoke alarm usage is quite different in apartments and private dwellings in Sweden. In 2002, when the overall percentage of households with smoke alarms was 75%, the percentage for single-family dwellings was 90% and the percentage for apartments was only 50%. The gap has been persistently large and quite different from the pattern in the U.S., where legal requirements for smoke alarms, first in new construction, then in existing construction, were applied to apartments before dwellings. Even so, the U.S. gap was never large and often favored dwellings over apartments. In 1982, for example, when the overall percentage of households with smoke alarms was 67%, the percentage for one-and two-family dwellings was also 67% and the percentage for apartments was 63%.

### Fire Loss Rates, U.S. and Sweden



Source: NFPA and Swedish Fire Protection Association analysis.

Note: U.S. loss rates do not include the events of 9/11.

Because Sweden's fire loss rates are compiled by its insurance industry, it may be useful to compare these figures to U.S. loss rates based on both fire department estimates and insurance industry estimates. U.S. loss rates based on insurance industry data were lower than the rates based on fire department data in the late 1970s but have been higher since the mid-1980s. While insurance sources may spend more time on and have more training in the estimation of losses at individual fires, the U.S. insurance industry's estimated national total includes a significant adjustment for losses in uninsured and underinsured properties. This adjustment is at least as uncertain as fire department estimates of individual losses.

In the last three years, Sweden's loss rate has been lower than or equal to the U.S. loss rate based on insurance industry estimates but higher than the U.S. loss rate based on fire service estimates.

Source for gross domestic product statistics: OECD website, [www.oecd.org](http://www.oecd.org).