



Cost of Driving

Summary

In the year 2000, the total economic cost of motor vehicle crashes in the United States was \$230.6 billion. This represents the present value of lifetime economic costs for 41,821 fatalities, 5.3 million non-fatal injuries, and 28 million damaged vehicles. These figures include both police-reported and unreported crashes.

All costs in this report are expressed in year 2000 economics using a 4 percent discount rate. Nonfatal injury costs are stratified by severity level based on the Abbreviated Injury Scale. The cost components include productivity losses, property damage, medical costs, rehabilitation costs, travel delay, legal and court costs, emergency services (such as medical, police, and fire services), insurance administration costs, and the costs to employers. Values for more intangible consequences such as physical pain or lost quality of life are not included in this estimate.

Economic Impact of Crashes

- The cost of motor vehicle crashes that occurred in 2000 totaled \$230.6 billion. This is equal to approximately \$820 for every person living in the United States and 2.3 percent of the U.S. Gross Domestic Product.
- The lifetime economic cost to society for each fatality is over \$977,000. Over 80 percent of this amount is attributable to lost workplace and household productivity.
- Each critically injured survivor cost an average of \$1.1 million. Medical costs and lost productivity accounted for 84 percent of the cost for this most serious level of non-fatal injury.
- Lost workplace productivity costs totaled \$61 billion, which equaled 26 percent of the total costs. Lost household productivity totaled \$20.2 billion, representing 9 percent of the total costs.
- Total property damage costs for all crash types (fatal, injury, and property damage only) totaled \$59 billion and accounted for 26 percent of all costs.
- Property damage only crashes (in which vehicles were damaged but nobody was injured) were the most costly type of crash, due to their very high rate of occurrence. Their costs totaled \$59.8 billion and accounted for 26 percent of total motor vehicle crash costs.
- Present and future medical costs due to injuries occurring in 2000 were \$32.6 billion, representing 14 percent of the total costs. Medical costs accounted for 26 percent of costs from non-fatal injuries.

- Travel delay cost \$25.6 billion or 11 percent of total crash costs.
- Approximately 9 percent of all motor vehicle crash costs are paid from public revenues. Federal revenues accounted for 6 percent and states and localities paid for approximately 3 percent. Private insurers pay approximately 50 percent of all costs. Individual crash victims pay approximately 26 percent while third parties such as uninvolved motorists delayed in traffic, charities, and health care providers pay about 14 percent. Overall, those not directly involved in crashes pay for nearly three-quarters of all crash costs, primarily through insurance premiums, taxes and travel delay. In 2000 these costs, borne by society rather than by crash victims, totaled over \$170 billion.

Incidence of Crashes

- 5.3 million persons were injured in 16.4 million motor vehicle crashes in 2000, including 41,821 fatalities. Twenty-one percent of these injuries occurred in crashes that were not reported to police.
- 27.6 million vehicles were damaged in motor vehicle crashes in 2000; 23.6 million or 86 percent of these vehicles were damaged in incidents that incurred property damage only. The remaining 14 percent involved injuries to occupants of the vehicle, or to non-occupants such as pedestrians or bicyclists.
- Approximately half of property damage only crashes and a fifth of all injury crashes are not reported to the police.

Alcohol Involvement in Crashes

- Alcohol-involved crashes resulted in 16,792 fatalities, 513,000 nonfatal injuries, and \$50.9 billion in economic costs in 2000, accounting for 22 percent of all crash costs.
- Costs for crashes involving a driver or non-occupant with a blood alcohol content of .10 percent or greater (the legal definition in most states), accounted for 75 percent of the total of all alcohol-involved crash costs.
- The impact of alcohol involvement increases with injury severity. Alcohol-involved crashes accounted for 10 percent of property damage only (PDO) crash costs, 21 percent of nonfatal injury crash costs; and 46 percent of fatal injury crash costs.
- Although drinking drivers may experience impaired judgment, perceptions and reaction times, not all crashes in which alcohol was present were caused by alcohol. Crashes in which alcohol was the cause resulted in 13,570 fatalities, over 360,000 nonfatal injuries, and nearly \$40 billion in economic costs. This is approximately 80 percent of the alcohol-related fatalities and 78 percent of costs. It represents 32 percent of all fatalities and 17 percent of all costs from motor vehicle crashes.



Cost of Driving

Impact of Speed-related Crashes

- Crashes in which at least one driver was exceeding the legal speed limit or driving too fast for conditions cost \$40.4 billion in 2000.
- Speed-related crashes are associated with 12,350 fatalities, 690,000 nonfatal injuries and damage to 2.3 million vehicles in property damage only crashes. This represents 30 percent of all fatalities; 13 percent of all nonfatal injuries, and 10 percent of all property damage only crashes.
- Speed-related crashes cost an average of \$144 for every person in the United States.

Safety Belt Use

- In the year 2000, safety belts prevented 11,900 fatalities and 325,000 serious injuries, saving \$50 billion in medical care, lost productivity, and other injury related costs.
- Safety belt non-use represents an enormous lost opportunity for injury prevention. In the year 2000 alone, over 9,200 persons were killed and 143,000 were injured unnecessarily because they failed to wear their safety belts, costing society \$26 billion.
- Over the last 26 years, safety belts have prevented 135,000 fatalities and 3.8 million injuries. This saved society \$585 billion in medical care, lost productivity, and other injury related economic costs. During the same time period, nearly 315,000 additional fatalities and 5.2 million serious injuries could have been prevented by safety belts if all occupants had used them. This represents an economic loss of \$913 billion in unnecessary expenses and lost productivity.

Economic costs represent only one aspect of the consequences of motor vehicle crashes. Persons injured in these crashes often suffer physical pain and emotional anguish that is beyond any economic recompense. The permanent disability of spinal cord damage, loss of mobility, loss of eyesight, and serious brain injury can profoundly limit a person's life, and can result in dependence on others for routine physical care. More common, but less serious injuries, can cause physical pain and limit a victim's physical activities for years after the crash. Serious burns or lacerations can lead to long-term discomfort and the emotional trauma associated with permanent disfigurement. For an individual, these non-monetary outcomes can be the most devastating aspect of a motor vehicle crash.

The family and friends of the victim feel the psychic repercussions of the victim's injury acutely as well. Caring for an injured family member can be very demanding for others in the family, resulting in economic loss and emotional burdens for all parties concerned. It can change the

very nature of their family life; the emotional difficulties of the victim can affect other family members and the cohesiveness of the family unit. When a crash leads to death, the emotional damage is even more intense, affecting family and friends for years afterward and sometimes leading to the breakup of previously stable family units.

Alcohol-Involved Crash Costs

Overall, these crashes are responsible for 22 percent of total economic costs.

For all crashes, fatalities are approximately 0.8 percent of injured survivors. This rate quadruples for crashes involving alcohol. Similarly, the rate for critical injuries triples for alcohol cases and for severe injuries it more than doubles.

Speeding

Excess speed can contribute to both the frequency and severity of motor vehicle crashes. At higher speeds, additional time is required to stop a vehicle and more distance is traveled before corrective maneuvers can be implemented. Speeding reduces a driver's ability to react to emergencies created by driver inattention, by unsafe maneuvers of other vehicles, by roadway hazards, by vehicle system failures (such as tire blow-outs), or by hazardous weather conditions. The fact that a vehicle was exceeding the speed limit does not necessarily mean that this was the cause of the crash, but the probability of avoiding the crash would likely be greater had the driver or drivers been traveling at slower speeds.

A speed-related crash is defined as any crash in which the police indicate that one or more drivers involved was exceeding the speed limit or driving too fast for conditions. FARS data indicate that in 2000, a total of 12,350 fatalities, representing 29.5 percent of all motor vehicle fatalities, occurred in speed-related crashes, which, in turn, comprised 29 percent of all motor vehicle crashes.

The costs of crashes that involved excessive speed were \$40.4 billion, representing 18% of total costs.

There is a significant overlap between alcohol involvement and speed. Many speed-related crashes involved alcohol and vice-versa. These two estimates should not be added together in order to account for the portion of costs that represent the combined factors of speed and alcohol.

Safety Belt Use

When properly fastened, safety belts provide significant protection to vehicle occupants involved in a crash. The simple act of buckling a safety belt can improve an occupant's chance of surviving a potentially fatal crash by from 45 to 73 percent, depending on the type of vehicle and seating position involved. They are also highly effective against serious nonfatal injuries. Belts reduce the chance of receiving an MAIS 2-5 injury (moderate to critical), by 44-78 percent.

Although all passenger vehicles have been equipped with safety belts since 1968, a sizable minority of vehicle occupants still neglect to use these devices. As of February 2001, about 70 percent of occupants wear their safety belts. Usage has risen steadily throughout the last decade, largely in response to public education programs sponsored by state and Federal safety agencies, as well as private consumer and safety advocacy groups. A major factor in this increase has been the passage of safety belt use laws.





Cost of Driving

These laws can take the form of either primary enforcement laws, under which police can stop drivers specifically for failing to wear seat belts, or secondary laws, under which fines can only be levied if a driver is stopped for some other offense. Primary enforcement laws are far more effective in increasing safety belt use. Experience in a number of states indicates that usage rates rise from 10-15 percentage points when primary laws are passed. For example, usage in California jumped from 70 percent to 82 percent when a primary law was passed in 1993.

Overall, states with primary belt use laws have an average belt use rate that is 17 points higher than states with only secondary enforcement.

Over the last 26 years, safety belts have saved 135,000 lives and prevented 3.8 million serious nonfatal injuries. At current use rates, they are preventing 11,900 fatalities and 325,000 serious nonfatal injuries annually.

Since 1975 had all occupants worn their safety belts. Over this period, passenger vehicles were equipped with devices that could have saved over 300,000 additional lives and prevented 5.2 million additional serious injuries if all vehicle occupants had taken a few seconds to buckle their safety belts. At current (2000) belt use rates, an additional 9,200 fatalities and 143,000 serious injuries could be prevented every year if all passengers were to wear their safety belts. This represents an enormous lost opportunity for injury prevention.

At 2000 usage rates, safety belts are saving society an estimated \$50 billion annually in medical care, lost productivity, and other injury related costs. At current usage rates, the needless deaths and injuries that result from nonuse continue to cost society and estimated \$26 billion annually in medical care, lost productivity, and other injury related costs.

Source of Payment

The results indicate that approximately \$21 billion, or 9 percent of all costs are borne by public sources, with federal revenues accounting for 6 percent and states accounting for just under 3 percent. This is the equivalent of \$203 in added taxes for every household in the United States.³ Private insurers paid \$116 billion, or 50 percent, while individual crash victims absorbed \$60 billion or 26 percent. Other sources, absorbed \$33 billion (14 percent) of the total cost.

Costs paid out of federal or state revenues are funded by taxes from the general public. Similarly, costs borne by private insurance companies are funded by insurance premiums paid by policyholders, most of whom are not involved in crashes.

Perhaps the most significant point from Table 23 is that society at large picks up nearly 1/2 of all crash costs that are incurred by individual motor vehicle crash victims.

