

# **IS THE U.S. ON THE PATH TO THE LOWEST MOTOR VEHICLE FATALITIES IN DECADES?**

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**MICHAEL SIVAK**



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MOTOR VEHICLE FATALITIES IN DECADES?

Michael Sivak

The University of Michigan  
Transportation Research Institute  
Ann Arbor, Michigan 48109-2150  
U.S.A.

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| 16. Abstract<br>Trends in U.S. motor vehicle fatalities, gasoline sales, and distance driven were examined for 12 months from May 2007 through April 2008. The results show substantial year-to-year reductions in motor vehicle fatalities during this time period that cannot be fully explained by the reductions in gasoline sales and distance driven. This is especially the case for the latest two months examined (March and April 2008). Here, the reductions in motor vehicle fatalities averaged 20%, while the reductions in gasoline sales and distance driven were in low single-digits. Consequently, it appears that a major shift in driver behavior might be occurring. This shift may involve disproportionate reductions in distance driven for more risky driving conditions and for drivers with less income (who tend to have higher crash rates), as well as possible reductions in speeds as a means of increasing fuel economy. Should the March and April 2008 trends continue, the 2008 annual fatalities would drop to under 40,000 for the first time since 1961. |  |  |           |
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## Analysis

This report examines the relationships among recent trends in gasoline sales, distance driven, and motor vehicle fatalities.

Figure 1 presents the year-to-year monthly changes (e.g., April 2008 vs. April 2007) in gasoline sales (EIA, 2008), estimated miles driven (FHWA, 2008), and motor-vehicle fatalities (NSC, 2008) for May 2007 through April 2008. Thus, the analysis used data from May 2006 through April 2008. (The motor vehicle fatalities are based on preliminary state data. At the time of the analysis, the 2008 data were not yet available through April for six states [AL, KS, MS, PA, VT, and WA]. Thus, for compatibility, the analysis excluded the data for these six states for all time periods examined. Also, 2008 is a leap year. Therefore, all raw data for February 2008 were multiplied by 28/29.)

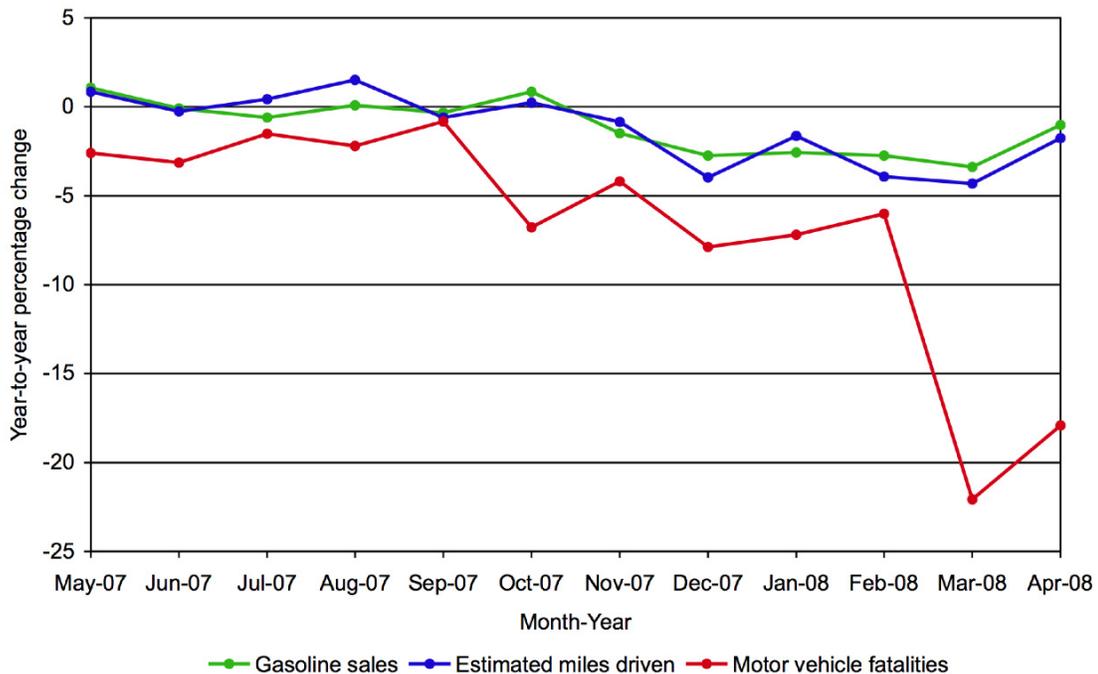


Figure 1. Year-to-year changes in gasoline sales, estimated miles driven, and motor-vehicle fatalities.

*Gasoline sales.* The changes in gasoline sales during the first six months examined (May through October 2007) ranged from +1.1% to -0.6% and averaged +0.2%. On the other hand, the changes for the most recent six months (November 2007 through April 2008) were all decrements ranging from -1.0% to -3.4% and averaging -2.3%.

*Estimated miles driven.* The monthly changes in the estimated miles show a pattern similar to that of gasoline sales. The changes for May through October 2007 ranged from +1.5% to -0.6% and averaged +0.4%; the changes for November 2007 through April 2008 were all decrements ranging from -0.9% to -4.3% and averaging -2.7%.

*Motor vehicle fatalities.* Motor vehicle fatalities declined for each of the 12 months. Furthermore, these declines were consistently more substantial than those for gasoline sales or estimated miles driven. The changes from May 2007 through February 2008 ranged from -0.8% to -7.9% and averaged -4.2%. However, the changes for March and April 2008 were -22.1% and -17.9%, respectively. (National Safety Council, the source of the fatality data, counts fatalities that occur within one year of the crash. Therefore, the preliminary data for the time periods in 2007 and 2008 for which one year has not yet elapsed underestimate the final count by up to 2% [NSC, 2007].)

*Motor vehicle fatalities vs. gasoline sales and miles driven.* The reductions in motor vehicle fatalities cannot be fully explained by the changes in gasoline sales. Although this applies to the entire time period examined, it is especially noticeable for the latest two months (March and April 2008). For these two months, motor vehicle fatalities changed by -22.1% and -17.9%, while gasoline sales changed by -3.4% and -1.0%, and estimated miles driven by -4.3% and -1.8%. Thus, it appears that a major shift in the behavior of U.S. drivers might be occurring.

There are several possible explanations for the fact that the recent decreases in motor vehicle fatalities are substantially greater than the decreases in gasoline sales or the estimated miles driven. First, the reduction in the distance driven, albeit smaller than the reduction in motor vehicle fatalities, might have been disproportionately greater for more

risky driving conditions. For example, the reduction in miles driven on rural roads (the more risky roads) for the latest two months (March and April 2008) was greater than the reduction on urban roads (-4.0% vs. -2.6% [FHWA, 2008]). Second, because of the increasing cost of gasoline, the amount of driving might have decreased disproportionately for people with less income. In turn, people with less income tend to have higher crash rates, be they teenagers or seniors (Evans, 2004), or poorer people in general (Stamatiadis and Puccini, 1999). Third, there has been recent emphasis on driving slower as a means of achieving greater fuel economy. It could be that the safety benefits of driving slower (if, indeed, speeds have been reduced) are proportionally greater than the fuel-economy benefits. (The disproportional reduction of driving on rural roads [where speeds are generally faster than on urban roads] also tends to decrease the overall speed profile.)

As more detailed data become available, it will be possible to check a number of patterns in those data that will help to discriminate among the possible mechanisms for the general reductions documented here. Such patterns involve driver variables (e.g., gender, age), crash type (e.g., rollover versus collision, involvement of alcohol), and vehicle type (e.g., motorcycle, passenger car, light truck). It will also be important to examine trends for crashes of lower severity than the fatal crashes considered here.

In summary, it appears that the increased cost of gasoline has finally begun to influence driver behavior both in terms of the amount and type of driving. Consequently, one of the indirect benefits of the increased cost of gasoline (in addition to, for example, a reduction in emitted CO<sub>2</sub>) is likely to be a decrease in motor vehicle fatalities. Should the March and April 2008 trends continue, the 2008 annual fatalities would drop to under 40,000 for the first time since 1961 (NSC, 2007).

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