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# Auto Insurers and the Airbag: Reply

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Peterson and Hoffer (1996) provide interesting evidence of offsetting behavior and other useful data in their comment on our article (Kneuper and Yandle, 1994). We welcome their effort to test hypotheses related to our research on airbags. Their comment provides an opportunity for us to clarify a key argument in our piece and to note the linkages between our argument and those of Peterson and Hoffer.

Our article describes airbag technology as a means for auto insurers "to change the nature of the automobile hazard, effectively to alter the nature of losses and to convert uncertainty of future claims into risk" (p. 108). We discuss the possibility that the dollar value of property claims might rise if airbags shift personal injury losses to property losses, but note that predictability is what matters, not the magnitude of claims. It is in this context that we call attention to Peltzman's work on offsetting behavior, noting that, under our theory, insurers prefer predictable risk to uncertainty even if improved auto safety induces riskier behavior (footnote 7, p. 113). The ability to set accurate premiums matters most.

Given a population of seatbelt-equipped cars, insurers cannot *ex ante* predict accurately the behavior of drivers. Therefore, *ex post* variance or risk associated with claims will be higher. Risk management requires risk estimation. Mandatory airbags move the population of autos in the direction of homogeneous exposure units and convert uncertainty, which cannot be estimated, to risk, which can.

Following our discussion, Peterson and Hoffer see the possibility that conversion to airbags will change the frequency of claims as between personal injury and property losses. They test the hypothesis that the ratio of claims for property loss to personal injury claims will be higher for a population of airbag-equipped cars. They find that the frequency for both categories of claims rises and present suggestive evidence that property loss claims may rise faster than personal injury claims. The tentative evidence could be seen as being consistent with our argument about loss substitution.

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Peterson and Hoffer were unable to test our hypothesis regarding upper body injuries that lead to difficult trials and unpredictable outcomes, but they may have tested a related hypothesis, which may be described as follows: With airbags, people drive more aggressively; they have more accidents that yield a larger dollar amount of property losses, a greater number of minor injuries, but fewer severe injuries. Hence, there is a greater frequency of both property and injury claims, although the total dollar value of insured losses will be lower.

We applaud Peterson and Hoffer for their effort, noting their participation in other meaningful work that provides evidence of offsetting behavior (Peterson, Hoffer, and Millner, 1995). However, we repeat the key point of our article: Insurers supported airbags because of the improved *predictability* of losses. We suggest that a direct test of that hypothesis would require either an examination of underwriters' data and the process used for setting premiums or an examination of the variance of personal injury claims under pre- and post-airbag conditions.

## REFERENCES

Kneuper, Robert and Bruce Yandle, 1994, Auto Insurers and the Airbag, *Journal of Risk and Insurance,* 61: 107–116.

Peterson, Steven and George Hoffer, 1996, Auto Insurers and the Airbag: Comment, *Journal of Risk and Insurance,* 63: 511–519.

Peterson, Steven P., George E. Hoffer, and Edward L. Millner, 1995, Are Drivers of Airbag-Equipped Cars More Aggressive?: A Test of the Peltzman Hypothesis, *Journal of Law and Economics,* 38(2): 251–264.