

**Correction to:
Fuel Efficiency and Motor Vehicle Travel: The Declining Rebound Effect**

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This correction applies to Tables 5 and B2 of the published version of the paper (*Energy Journal*, vol. 28, no. 1, 2007, pp. 25-51). It also applies to an earlier working paper version (UC Irvine Economics Working Paper #05-06-03, version dated July 2006); that version was replaced by a corrected working paper on August 20, 2007).

The last panel of each of these tables, containing estimates of the elasticity of fuel consumption with respect to fuel price ($\varepsilon_{F,PF}$), was originally calculated omitting an interaction term between the two component elasticities, namely the elasticity of vehicle-miles traveled with respect to fuel cost per mile ($\varepsilon_{M,PM}$) and the elasticity of fuel efficiency with respect to fuel price ($\varepsilon_{E,PF}$). The correct formula is contained in footnote 26 of the corrected working paper, which we reproduce here:

Writing the identity $F=M/E$, giving fuel consumption as a ratio of VMT and fuel efficiency, in its logarithmic form $f=m-e$, then differentiating with respect to p_F , the logarithm of fuel price, yields the following equation when we remember that m depends on the logarithm of cost per mile, $p_m=p_F-e$:

$$\frac{df}{dp_F} = \left(\frac{\partial m}{\partial p_F} - \frac{\partial m}{\partial i} \cdot \frac{de}{dp_F} \right) - \frac{de}{dp_F}$$

[where $i = -e =$ logarithm of fuel intensity. Note that $p_m=p_F+i$ so that $\partial m/\partial p_F=\partial m/\partial i$.] In elasticity terms, using notation similar to that in (7)-(9):

$$\varepsilon_{F,PF} = \varepsilon_{M,PM} \cdot (1 - \varepsilon_{E,PF}) - \varepsilon_{E,PF} \tag{10}$$

where $\varepsilon_{M,PM}$ and $-\varepsilon_{E,PF}$ are the elasticities reported in the first two panels of Table 5. This equation is derived by USDOE (1996, p. 5-11) and Small and Van Dender (2005, eqn. 6). We regret that in the July 2006 version of this working paper, and in the subsequent published shorter version in *Energy Journal* (vol. 28, no. 1, 2007, pp. 25-51), we accidentally omitted the term in parentheses in equation (10) when computing $\varepsilon_{F,PF}$ for Table 5 and therefore overstated the magnitudes of $\varepsilon_{F,PF}$. Comparing the published 3SLS point estimates (last three rows of Table 5) with those shown here, we find they were overstated by 0.0010–0.0019 for the short run and by 0.0243–0.0425 for the long run, which is 2% of the correct value for the short run and 8–12% for the long run. The same correction applies to Table B2.

The original and corrected values for these tables are shown on the next page.

Table 5. Rebound Effect and Other Price Elasticities – Corrections to Bottom Panel

Variable	Estimated Using 3SLS		Estimated Using OLS	
	Short Run	Long Run	Short Run	Long Run
<u>Original version</u>				
Elasticity of fuel consumption with respect to fuel price:				
At sample average	-0.0892 (0.0058)	-0.4268 (0.0355)	-0.1711 (0.0084)	-0.6878 (0.0436)
At US 1997-2001 avg.	-0.0667 (0.0091)	-0.3340 (0.0451)	-0.1671 (0.0122)	-0.6754 (0.0503)
At US 1997-2001 avg. if <i>pm</i> stayed at '66-'01 avg.	-0.0758 (0.0068)	-0.3715 (0.0384)	-0.1543 (0.0094)	-0.6360 (0.0466)
<u>Corrected version</u>				
Elasticity of fuel consumption with respect to fuel price:				
At sample average	-0.0873 (0.0056)	-0.3813 (0.0277)	-0.1638 (0.0077)	-0.5695 (0.0287)
At US 1997-2001 avg.	-0.0657 (0.0095)	-0.3097 (0.0372)	-0.1601 (0.0132)	-0.5616 (0.0333)
At US 1997-2001 avg. if <i>pm</i> stayed at '66-'01 avg.	-0.0744 (0.0065)	-0.3380 (0.0316)	-0.1485 (0.0087)	-0.5377 (0.0328)

Table B2. Comparison of Selected Structural Estimates: 3SLS – Corrections to Bottom Panel

Elasticity	Using Base Version of <i>cafe</i>		Using Alternate Version of <i>cafe</i>	
	Short Run	Long Run	Short Run	Long Run
<u>Original Version</u>				
Elasticity of fuel consumption with respect to fuel price:				
At sample average	-0.0892	-0.4268	-0.1226	-0.5993
At US 1997-2001 avg.	-0.0667	-0.3340	-0.1037	-0.5207
At US 1997-2001 avg. except <i>pf</i> = \$1.93 nominal	-0.0758	-0.3715	-0.1100	-0.5472
<u>Corrected Version</u>				
Elasticity of fuel consumption with respect to fuel price:				
At sample average	-0.0873	-0.3813	-0.1191	-0.5131
At US 1997-2001 avg.	-0.0657	-0.3097	-0.1018	-0.4697
At US 1997-2001 avg. except <i>pf</i> = \$1.93 nominal	-0.0744	-0.3380	-0.1075	-0.4837