Appendix E. Additional Sensitivity Analyses for Time-Varying Models

Note: Appendices Available on the Web appear in a different order than in the original Investigators’ Report. HEI has not changed these documents. Appendices were relettered as follows:

Appendix B was originally Appendix A
Appendix C was originally Appendix B
Appendix D was originally Appendix C
Appendix E was originally Appendix D
Appendix D. Additional sensitivity analysis for time-varying models

Sensitivity of NO₂ results  Since the NO₂ data from April 1, 1994 to February 1, 1995 were deleted in the regular analysis, we performed a sensitivity analysis, where all the values during this period were included.

The right-hand side of Figure D. 1 shows the resulting time-varying estimate. There was no real difference visible in the effect of the specific NO₂ data (Figure D. 1, a)). The increase in the time-varying effect during the period April 1, 1994 to February 1, 1995 is an artifact due to smaller concentrations measured in this period.

Sensitivity regarding the imputed values  We re-estimated the models for PM₁₀, lag 0 MC₀.₀₁₋₂.₅, lag 0 and ultrafine particles, lag 4 without imputed values. Results of this analysis are shown in Figure D. 2 for PM₁₀ and Figure D. 3 for MC₀.₀₁₋₂.₅. Note that there was no PM₁₀ measured between 1992 and 1995. From 1996 onwards, the time-varying estimates without imputed values were in good agreement compared to those of the analysis with imputed values. For MC₀.₀₁₋₂.₅, we saw only slight differences for the end of the study period; however, this should be evaluated in view of the very wide 95% credible interval. The same holds true for ultrafine particles (NC₀.₀₁₋₀.₁) (results not shown).
Figure D. 1: Time-varying association of NO$_2$, lag 3 without (top) and with period 1994 (bottom).

Figure D. 2: Time-varying association of PM$_{10}$, lag 5 without imputed values (top) and with imputed values (bottom).

Figure D. 3: Time-varying association of MC$_{0.01-2.5}$ without imputed values (top) and with imputed values (bottom).
Figure D.1: Time-varying association of NO$_2$, lag 3 without (top) and with period 1994 (bottom).
Figure D. 2: Time-varying association of PM$_{10}$, lag 5 without imputed values (top) and with imputed values (bottom).
Figure D. 3: Time-varying association of MC_{0.01-2.5} without imputed values (top) and with imputed values (bottom).