

Despite the large improvement of my bounds over Makarov bounds, the difference in the quantiles of the smoking effects between SCCG women and others is still inconclusive from my bounds. The sharp upper bound on the quantile of the effect for the SCCG group is quite lower than that for the entire sample while the sharp lower bound is 0 for both groups; the identification region for the SCCG group is contained in that for the entire sample. Since the two identification regions overlap, one cannot conclude that the effect at each quantile level q is smaller for the SCCG group. This can be further investigated by developing formal test procedures for the partially identified quantile of treatment effects or by establishing tighter bounds under additional plausible restrictions. I leave these issues for future research.

My empirical analysis shows that smoking is on average more dangerous for infants to women with a higher tendency to smoke. Also, women with SCCG are less likely to have low birth weight babies when they smoke. The estimated bounds on the median of the effect of smoking on infant birth weight are $[-457, 0]$ grams and $[-299, 0]$ grams for the entire sample and for women with SCCG, respectively.

Based on my observations, I suggest that policy makers pay particular attention to smoking women with low education in their antismoking policy design, since these women's infants are more likely to have low weight. Considering the association between higher education and better personal health care as shown in Park and Kang (2008), it appears that smoking on average does less harm to infants to mothers with a healthier lifestyle. Based on this interpretation, healthy lifestyle campaigns need to be combined with antismoking campaigns to reduce the negative effect of smoking on infant birth weight.

5.5 Testability and Inference on the Bounds

5.5.1 Testability of MTR

My empirical analysis relies on the assumption that smoking of pregnant women has nonpositive effects on infant birth weight with probability one. This MTR assumption is not only plausible but also testable in my setup. While a formal econometric test procedure is beyond the scope of this paper, I briefly discuss testable implications. First, MTR implies stochastic dominance of Y_1 over Y_0 . Since I point-identify their marginal distributions for compliers, stochastic dominance can be checked from the estimated marginal distribution functions. Except for very low q -quantiles with $q < 0.006$ where the quantile curves estimates are imprecise as noted in subsection 5.4, my estimated marginal distribution functions satisfy the stochastic dominance for the entire sample and all subgroups. Second, under MTR my new lower bound should be lower than the Makarov upper bound. If MTR is not satisfied, then my new lower bound is not necessarily lower than the Makarov upper bound. In my estimation result, my new lower bound is lower than the Makarov upper bound for all $\delta > 0$ and in all subgroups.