

Abstract: Lead is a metal known to affect almost every organ and system in the human body. However, lead still exists in ambient air in the U.S. and continues to endanger public health and welfare. In response, the Environment Protection Agency of the U.S. substantially strengthened the National Ambient Air Quality Standard (NAAQS) for lead at the end of 2008. The revised standard is 10 times tighter than the previous one set over 30 years ago by the U.S. In this paper, we investigate the effect of the new NAAQS for lead on (i) environmental quality in the U.S., (ii) trade patterns between the U.S. and Mexico and (iii) infant health in Mexico. We employ a unique combination of public/non-public datasets linking trade, environment and health outcomes both in the U.S. and Mexico that provide a rare level of detail and that were not previously employed in the related fields. Importantly, our data contain exact locations of polluting plants and residential locations at a fine disaggregated level that allow us to identify critical distance over which households are exposed to pollution emitted from sources. We use this differential impact by the distance from lead-emitting plants as the basis for a difference-in-differences estimation strategy. We find that the new lead regulation substantially improved the ambient air quality in the U.S.; the concentrations of lead in ambient air fell in areas close to lead-emitting industrial plants than areas slightly away from these plants in the U.S. Our evidence suggests that such improvements in the U.S. domestic environmental quality are accompanied by increased exports of lead contents to Mexico for recycle and production. We also find that exports from lead-emitting Mexican firms to the U.S. have also increased. Consequently, we find that the birth outcomes in Mexico deteriorated in proximity to battery recycling plants as compared with areas slightly away from them. Our findings are consistent with the pollution haven hypothesis suggesting that the stringent environmental policy in a developed country can induce offshoring? of pollution-intensive production. Our paper is the first paper to provide econometric evidence of adverse health consequences of such offshoring for a country with lax environmental standards.