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DEPARTMENT OF PUBLIC ADMINISTRATION AND POLICY

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NBER and IZA

RE: Reconsideration of 2009 Endangerment Finding and Greenhouse Gas Vehicle Standards

Dear Environmental Protection Agency,

I am Dr. Claudia Persico, Associate Professor of environmental policy in the Department of Public Administration and Policy at the School of Public Affairs at American University. I can be reached at cpersico@american.edu. I am an expert on how pollution affects human health and children's academic outcomes and life chances.

Air pollution emitted by cars, buses and trucks has numerous impacts on human health, as well as greenhouse gas emissions. These indirect costs and benefits are very real and it would be foolish to not consider them. For example, growing literatures in economics, public health and epidemiology have documented the contemporaneous health (Anderson and Thundilyil, 2011; Ransom and Pope, 1995; Pope and Dockery, 1999; Friedman et al., 2001; Moretti and Neidell, 2011; Schlenker and Walker, 2015) and mortality-related impacts among infants and the elderly (Anderson, 2016; Deryugina et al, 2016) of air pollution. In other words, **exposure to air pollution kills babies and the elderly**. Air pollution from traffic is linked to bronchitis (Beatty and Shimshack, 2011), diabetes (Bowe et al, 2018) and missing school (Currie et al, 2008). A growing literature also documents how in utero exposure to pollution affects health outcomes at birth such as infant mortality (Currie and Neidell, 2005; Chay and Greenstone, 2003), birth weight (Currie, Davis, Greenstone, and Walker, 2015) and the development of congenital anomalies (Currie, Greenstone, and Moretti, 2011). See also Jayachandran (2009), Currie and Walker (2011), Knittel, Miller, and Sanders (2015), Arceo-Gomez, Hanna, and Oliva (2015), and Almond and Currie (2011). Some recent research also investigates how pollution exposure during gestation affects later human capital outcomes (Almond, Edlund, and Palme, 2009; Bharadwaj, Gibson, Graff Zivin, and Neilson, 2017; Black, Bütikofer, Devereux, and Salvanes, 2013; Ferrie, Rolphe and Troeskin, Persico, Figlio and Roth, 2016; Rau et al., 2015; Sanders, 2012).

For example, Heissel, Persico and Simon (2018) find that **pollution from highways affects students' academic achievement, attendance and behavioral incidents in nearby schools**. Austin, Heutel and Kreisman (2019) document how school bus emissions harm academic achievement. A few studies also document how acute, short term exposure to air pollution on testing days affects test score performance and performance in high-skilled occupations (Archsmith, Heyes, and Saberian, 2017). For example, Marcotte (2017) uses the variation in air quality on different testing days and finds that children who take tests on days on worse days for pollen and fine airborne particulate matter have worse outcomes. Similarly, Roth (2016) finds that pollution on testing days affects college students' performance in the United Kingdom, and Ebenstein and Roth (2014) find that pollution affects performance on high school exit exams in Israel. Hernstadt and Muehlegger (2015) find that crime is higher downwind of highways than on the opposite upwind side, implying that **pollution might have cognitive effects**. As Almond, Currie and Duque (2016) point out in their recent literature review, even mild health shocks in early life can lead to substantial long term negative outcomes.

Most importantly, **we do not yet know all of the costs of pollution and accompanying benefits of regulation**. Pollution is actually far more costly in lost years of life, health-related costs, human capital costs, lost wages (Borgschulte, Molitor and Zou, 2017; Isen, Rossin-Slater and Walker, 2017), lost tax revenue, and crime (see Feigenbaum and Muller, 2016; Aizer and Currie, 2017; Billings and Schnepel, 2017) than we ever guessed. This research discovers new things about the indirect benefits of regulation and costs of pollution every day.

This rule would jeopardize the progress we have made in reducing children's and the elderly's exposure to air pollution. It would also potentially contribute to global climate change, which is extremely costly. The Environmental Protection Agency should not repeal green house gas emissions standards.

I request that the following resources be read in addition to my comment:

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Sincerely,

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