

# Muxin Zhai

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**EDUCATION**      *PhD candidate in Economics*, University of Washington, Expected Jun 2016

*M.A. in Economics*, University of Washington, Dec 2013

*B.S. in Economics and Mathematics*, University of Iowa, Dec 2010

**FIELD OF INTEREST**      Environmental Economics, Health Economics, Applied Microeconometrics

**COMPUTER SKILLS**      *Software*: Stata, ArcGIS, Matlab, SPSS, SAS, R, L<sup>A</sup>T<sub>E</sub>X, MS Office.

**TEACHING EXPERIENCE**      Department of Economics, University of Washington - Seattle

- *Instructor*: Intermediate Microeconomics  
Fall 2014 - Fall 2015
- *Instructor*: Introduction to Microeconomics  
Fall 2013 - Summer 2014
- *Teaching Assistant*: Introduction to Microeconomics  
Winter 2012 - Spring 2013

**RESEARCH EXPERIENCE**      Job market paper:  
*Air Pollution Exposure and Fetal Health: Does A Safety Threshold Exist?*

Abstract:

This paper estimates the causal impact of fetal exposure to three “criteria air pollutants” on birth weight. I establish a series of hypothetical “safety thresholds” of air pollution and construct an innovative index called “average pollution degree” (APD) that measures the pollution concentrations above each threshold. Matching individual-level natality data with county-level air pollution in the United States from 1991 to 2008, I find that fetuses are vulnerable to very low concentrations of carbon monoxide (CO), especially during the first and last trimesters of pregnancy. Fetuses are not significantly affected by ozone (O<sub>3</sub>) and sulphur dioxides (SO<sub>2</sub>) unless their concentrations rise above certain thresholds. My heterogeneity analysis suggests strong gender and racial disparities in the sensitivity to air pollution. In addition, I find maternal smoking and drinking behaviors may act synergetically with air pollution in fetal development. The fact that even a hypothetical safety threshold lying below the current EPA standards would still generate adverse health outcomes indicates that more restrictive regulation is needed to protect fetal health.

Working papers:

*The Largest Low Emission Zone of Europe: Traffic and Air Quality in London*

Abstract:

Low emission zone (LEZ) has been extensively adopted in many European countries

as a clean air strategy. I estimate the effect of the largest LEZ of Europe using a unique dataset on air quality and traffic flow in England from 2005 to 2010. I find that traditional difference-in-differences estimation fails to capture any significant effect of implementing LEZ in Great Britain. I propose external and internal reasons for this failure. Externally, the policy might generate positive spillovers on outside-LEZ regions due to the national flow of subject vehicles. Internally, the policy might induce behavioral adjustments such as substituting toward non-subject vehicles. I provide evidence for each of these reasons.

*Economic Incentive-Based Substitution on Heterogeneous Good: Evidence from the U.S. Car Allowance Rebate System*

Abstract:

This paper uses a hedonic price model to analyze the heterogeneous preferences on vehicle attributes using data under the 2009 Car Allowance Rebate System. I focus on the shifts in both the number of vehicles purchased and the attributes of transacted vehicles induced by this federal stimulus. Using simulation results from the hedonic price model, I find that roughly 73 percent passenger car consumers and 82 percent truck consumers are not likely to purchase the same vehicle without the government rebate. I also find evidence that the stimulus has induced consumers to substitute some vehicle attributes toward fuel efficiency attributes (e.g., MPG) to take advantage of the rebate.

Work in progress:

*Income Inequality and Student Achievement: Evidence from a Cross-Country Standardized Test* (with Jorge Rogas)

*The Impact of Climate Change on Migration of Young Generations*

*The Effect of Crime Rate on Short-Term Housing Market*

*Assessing the Environmental and Economic Impacts of Airplane Delays*

**AWARD  
FELLOWSHIP**

Langton Award for Teaching, University of Washington, 2013-14  
Preston Scholarship, University of Washington, Fall 2011  
Distinguished Undergraduate Student, University of Iowa, 2010

**MEMBERSHIP  
AFFILIATION**

*Graduate Fellow*, Center for Environmental Politics, University of Washington  
*Member*, American Economics Association  
*Member*, Association of Environmental and Resource Economics

**LANGUAGES**

English (Fluent), Chinese (Native)

**REFERENCES**

Robert Halvorsen  
UW Economics  
Savery Hall 351  
206-543-5546  
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206-543-5784  
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Haideh Salehi-Esfahani (teaching reference)  
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