

## **RANDY CHUGH**

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### **EDUCATION**

Ph.D. Economics, University of Maryland at College Park, expected May 2012  
M.S. Mechanical Engineering, SUNY at Buffalo, June 2003  
B.S. Mechanical Engineering, SUNY at Buffalo, June 2001

### **DISSERTATION**

*"Fuel Economy Regulation in the Indian Car Market"*  
Committee: Professor Maureen Cropper (Chair), Professor John Rust, Professor Robertson Williams III

### **FIELDS OF SPECIALIZATION**

Primary: Environmental Economics, Empirical Industrial Organization  
Secondary: Transportation, Computational Economics

### **PUBLICATIONS AND PAPERS**

*"Dieselization of the Indian Car Market, an Empirical IO Perspective"* [Job Market Paper]  
Presented research sketch at NBER Summer Institute, 2011  
*"The Cost of Fuel Economy in the Indian Passenger Vehicle Market"*  
[*Energy Policy*, November 2011] (with Maureen Cropper and Urvashi Narain)  
Presented at ASSA Annual Meeting, Atlanta, GA 2010  
Presented at Camp Resources, 2011  
*"A Modified Contraction Mapping for Mixed Logit Demand Models"* [Work in Progress]

### **TEACHING EXPERIENCE**

*Instructor*, Game Theory, University of Maryland, Summer 2009, Fall 2009, Spring 2010, Fall 2010, Summer 2011  
*Teaching Assistant*, Health Economics, University of Maryland, Spring 2011  
*Teaching Assistant*, Intermediate Macroeconomics, University of Maryland, Spring 2009  
*Teaching Assistant*, Intermediate Microeconomic Theory, University of Maryland, Fall 2008  
*Teaching Assistant*, Economic History, University of Maryland, Fall 2007, Spring 2008

### **RESEARCH/WORK EXPERIENCE**

*Short Term Consultant*, World Bank, June 2008-June 2009  
*Aerospace Engineer*, Orbital Sciences Corporation, October 2003-June 2006

### **AWARDS**

Data Collection Grant (\$24,000), World Bank, February 2011 (with Maureen Cropper and Urvashi Narain)  
Departmental Teaching Award, Teaching Assistant, Health Economics, Spring 2011  
Departmental Teaching Award, Instructor, Game Theory, Spring 2010  
Departmental Teaching Award, Instructor, Game Theory, Fall 2010  
Jacob K. Goldhaber Award, for Travel to the WEAI conference, Summer 2009  
Graduate Assistantship, Fall 2007-Spring 2011  
Graduate Fellowship, Fall 2006, Spring 2007

## REFERENCES

- Prof. Maureen Cropper      University of Maryland    mcropper@umd.edu    (301) 405-3483  
Prof. Robertson Williams III    University of Maryland    rwilliams@arec.umd.edu    (301) 405-1284  
Prof. John Rust                      University of Maryland    jrust@gemini.econ.umd.edu    (301) 405-3489

## THESIS ABSTRACT

*Part I: “Dieselization of the Indian Car Market, an Empirical IO Perspective”* [Job Market Paper]

The Indian car market is the fastest growing in the world. With increased mobility, however, has come increased foreign oil dependence, fuel consumption, and associated externalities. In response to this, the Indian government is contemplating fuel economy standards, but at the same time continues to subsidize diesel fuel. The result of this policy has been a diesel discount of 30%, relative to petrol, and *dieselization*, the increasing market share of diesel cars. This paper uses a model of vehicle choice and kilometers driven to compare the welfare impacts of two possible policy responses: diesel subsidy elimination and diesel vehicle taxation. Using data comprised of household-level vehicle purchase and driving distance observations from the 2006 JD Power APEAL survey, I estimate a theoretically consistent model of discrete-continuous choice which explicitly accounts for unobserved household and vehicle characteristics and correlation between vehicle choice and driving distance. I find the effect of eliminating the diesel subsidy to be a reduction of the market share of diesel cars from 32% to 28%; a diesel car tax of 20% would achieve the same result. The diesel car tax option, however, does relatively little to change intensive margin incentives and would result in a reduction of diesel fuel consumption of only 12% compared to 30% for diesel subsidy elimination. In addition to being less effective, the diesel car tax option is found to be more costly in terms of consumer welfare. Expected compensated variation for a diesel car tax of 20% is found to be Rs. 40,600 (\$903) compared to Rs. 36,300 (\$807) for diesel subsidy elimination. Because of consumers’ ability to substitute among the wide variety of cars now available in the Indian market, neither policy imposes a welfare cost of more than 2% of average annual income.

*Part II: “The Cost of Fuel Economy in the Indian Passenger Vehicle Market”*  
[Energy Policy, November 2011] (with Maureen Cropper and Urvashi Narain)

The idea that consumers undervalue fuel economy—that they will not pay an extra dollar in purchase price to save a dollar in fuel costs—is a frequent justification for fuel economy standards. To investigate the validity of the undervaluation hypothesis in India, we use hedonic price functions to calculate the cost of purchasing an additional unit of fuel economy and compare it to the benefit of lower fuel costs over the life of the vehicle. Evaluated at sales-weighted average vehicle characteristics and annual driving distances, we find the present value of fuel savings falls within the 95 percent confidence interval of the implicit price of fuel economy for the almost all specifications. This result is consistent across all four market segments considered (petrol hatchbacks, diesel hatchbacks, petrol sedans, and diesel sedans) for the years 2002 through 2006. Thus, we fail to consistently reject the hypothesis that consumers appropriately value fuel economy. In most cases where we do reject the null hypothesis, the marginal cost of additional fuel economy exceeds the present value of fuel savings, suggesting that consumers may, in fact, be overvaluing fuel economy.

## PERSONAL INFORMATION

Citizenship: U.S.

Gender: Male