

## **MARIO CRUZ-GONZALEZ**

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### **EDUCATION**

Ph.D., Economics, Boston University, Boston MA, May 2018 (expected)

Dissertation Title: *Essays in Labor Economics and Econometrics*

Dissertation Committee: Kevin Lang, Kehinde Ajayi and Ivan Fernandez-Val

M.S., Economics (*Summa Cum Laude*), Center for Research and Teaching in Economics  
(Centro de Investigación y Docencia Económicas, CIDE), Mexico City, 2011

B.A., Economics (*Summa Cum Laude*), Center for Research and Teaching in Economics  
(Centro de Investigación y Docencia Económicas, CIDE), Mexico City, 2009

### **FIELDS OF INTEREST**

Labor Economics, Development Economics, Econometrics

### **PUBLICATIONS AND SUBMITTED PAPERS**

“Bias corrections for probit and logit models with two-way fixed effects,” (with Ivan Fernandez-Val and Martin Weidner) *The Stata Journal*, 17(3):517-545 (2017).

### **WORKING PAPERS**

“The Effect of Compulsory Preschool on Educational Outcomes and Parents’ Behavior: Evidence from Mexico,” *Job Market Paper*, October 2017.

“Do Group Monetary Incentives Influence the Estimation of Peer Effects? Evidence from the Aligning Learning Incentives Program,” May 2017.

### **OTHER PUBLICATIONS**

“Corruption and Human Development Around the World,” *Revista Mexicana de Economía Agrícola y de los Recursos Naturales*, (2011), 4(1).

“Health Status and Insurance Conditions of the Mexican Population,” (with Susan W. Parker) in *Seguridad Social Universal. Retos para su implementación en México*, Fausto Hernandez Trillo (ed.), CIDE: Colección Coyuntura y Ensayo, 2012.

“The Progresá Program,” in *La Protección Social en México*, Carlos Javier Cabrera Adame and Anibal Gutierrez Lara (eds.), UNAM: Mexico, 2011.

“The Evolution of Poverty in Mexico,” in *La Protección Social en México*, Carlos Javier Cabrera Adame and Anibal Gutierrez Lara (eds.), UNAM: Mexico, 2011.

“The Imperfect Economy: A Chronology of the Crisis,” (with Diana Lopez, Karla Zuñiga and Carlos Galván), *Economía Informa*, (2009), 357(2): 93-109.

## **FELLOWSHIPS AND AWARDS**

Dean's Fellowship, Boston University, 2012-2017  
Best Honors Thesis, M.S. Economics, CIDE, Mexico City, 2011  
Excellence Fellowship, CIDE, Mexico City, 2010-2011  
Conacyt Fellowship, Mexico City, 2009-2011

## **WORK EXPERIENCE**

Research Assistant for Marcus Winters, Boston University, 2017 – Present  
Research Assistant for Ivan Fernandez-Val, Boston University, 2014 – 2015  
Research Assistant for Susan Parker, CIDE, Mexico City, 2011 – 2012  
Research Assistant for Carlos Javier Cabrera Adame, UNAM, Mexico City, 2008 – 2010

## **TEACHING EXPERIENCE**

Instructor, Introductory Macroeconomic Analysis, Department of Economics, Boston University, Summer 2017  
Head Teaching Fellow, Introductory Macroeconomic Analysis, Department of Economics, Boston University, Fall 2015 – Spring 2017  
Teaching Fellow, Introductory Macroeconomic Analysis, Department of Economics, Boston University, Fall 2013 – Spring 2015  
Instructor, Intermediate Statistics, CIDE, Mexico City, Spring 2012  
Teaching Assistant, Advanced Econometrics I, CIDE, Mexico City, Spring 2012  
Teaching Assistant, Introduction to Econometrics, CIDE, Mexico City, Fall 2011  
Teaching Assistant, Advanced Mathematics I, CIDE, Mexico City, Fall 2011  
Instructor, Intermediate Macroeconomics, CIDE, Mexico City, Summer 2011  
Teaching Assistant, Advanced Macroeconomics II, CIDE, Mexico City, Spring 2011  
Teaching Assistant, Advanced Macroeconomics I, CIDE, Mexico City, Fall 2010.

## **LANGUAGES**

English (fluent), Spanish (native)

**COMPUTER SKILLS:** STATA, MATLAB, R, LaTeX

**CITIZENSHIP/VISA STATUS:** Mexico/F1

## **REFERENCES**

### **Professor Kevin Lang**

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### **Professor Ivan Fernandez-Val**

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## MARIO CRUZ-GONZALEZ

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### **The Effect of Compulsory Preschool on Educational Outcomes and Parents' Behavior: Evidence from Mexico** (Job Market Paper)

Early education has proven to be effective in fostering children's cognitive and non-cognitive outcomes both in the short and long terms; however, very little is known about the unintended effects that early education programs can potentially have on children's home environment. In the U.S., the success of small scale interventions –targeted primarily to disadvantaged children– has resulted in an increase in the offer of universal pre-K programs in some states; but such expansions are likely to ignore the ways in which access to early education can influence parents' behavior beyond changes in their labor supply. This study uses an exogenous variation in compulsory education laws in Mexico to show that preschool attendance can boost achievement in elementary and middle school without affecting children's cognitive ability (as measured by a test which is independent of language, reading and writing skills). Instead, being forced to send their kids to preschool seems to modify the way parents distribute both their own and their children's time at home when they are potentially enrolled in elementary school: children affected by the new compulsory education laws are less likely to perform non-school related activities (like doing domestic housework or taking care of other household members), and their mothers are more likely to spend time studying with them.

### **Do Group Monetary Incentives Influence the Estimation of Peer Effects? Evidence from the Aligning Learning Incentives Program**

In an experiment in Mexico, 88 Federal high schools were randomly assigned into three different treatment groups to promote mathematics achievement through performance based monetary incentives. Treatment one (T1) provided individual incentives to students only, and treatment two (T2) to teachers only. Treatment three (T3) offered both, individual and group incentives to students, teachers and school administrators, thus rewarding higher interactions among all the educational actors in the school. Using this experiment, I analyze the impact of classroom peers' ability (measured by their individual fixed effects) on student achievement for the three treatment groups. According to my results, monetary incentives increase the impact of a student peers' ability only when students are rewarded (either through T1 or T3). Additionally, this increase is statistically higher in T3 relative to T1 schools, suggesting interactions between all the educational actors in the school as a mechanism through which peers influence each other. The gains on the impact of peers' ability are also different for different types of students. Using the initial distribution of test scores to classify students by type (low, middle and high achievers), I find that monetary incentives reinforce the gains for low achievers when only students are rewarded, high achievers become positively affected by their peers when the rewards go to teachers, while middle achievers are the most affected by their peers when students are rewarded both individually and collectively.

### **Bias corrections for probit and logit models with two-way fixed effects** (with Ivan Fernandez-Val and Martin Weidner), *The Stata Journal*, 17(3): 517-545 (2017).

In this article, we present the user-written commands `probitfe` and `logitfe`, which fit probit and logit panel-data models with individual and time unobserved effects. Fixed-effects panel-data methods that estimate the unobserved effects can be severely biased because of the incidental parameter problem (Neyman and Scott, 1948). We tackle this problem by using the analytical and jackknife bias corrections derived in Fernandez-Val and Weidner (2016), for panels where the two dimensions (N and T) are moderately large. We illustrate the commands with an empirical application to international trade and a Monte Carlo simulation calibrated to this application.