

## Syllabus

[cmcd.economia@fgv.br]

**Course:** *Applied Microeconometrics II*

**Professors:**

**2018 THIRD QUARTER**

### PROGRAM

This course is the second part of a sequence of two courses that presents the econometric methods for impact evaluation. It discusses the literature of identification and estimation of treatment effects. This second part focuses on distributional treatment effects, multiple treatments, identification and estimation under failure of selection on observables assumption. It discusses theoretically the methods and presents applications with Brazilian data.

### BIBLIOGRAPHY

Angrist, Joshua D. and Jörn-Steffen Pischke. 2009. *Mostly Harmless Econometrics*. Princeton University Press.

Blundell, Richard and Monica Costa Dias (2009), "Alternative approaches to evaluation in empirical microeconomics," *Journal of Human Resources*, Vol. 44, No. 3, pp. 565-640.

Bourguignon, François e Luiz A. Pereira da Silva (eds.). 2003. *The Impact of Economic Policies on Poverty and Income Distribution. Evaluation Techniques and Tools*. Nova York: Oxford University Press for the World Bank.

Cameron, A. Colin e Pravin K. Trivedi. 2005. *Microeconometrics: Methods and Applications*. New York: Cambridge University Press.

Deaton, Angus. 1997. *The Analysis of Household Surveys. A Microeconomic Approach to Development Policy*. Baltimore: John Hopkins University Press for the World bank.

Heckman, James J. and Edward J. Vytlačil (2007a), "Econometric evaluation of social programs Part 1: Causal models, structural models, and econometric policy evaluation." Chapter 70 in James J. Heckman and Edward Leamer (eds.) *Handbook of Econometrics*, Volume 6B, pp. 4779-4874.

Heckman, James J. and Edward J. Vytlačil (2007b), "Econometric evaluation of social programs Part 2: Using the marginal treatment effect to organize alternative econometric estimators to evaluate social programs, and to forecast their effects in new environments." Chapter 71 in James J. Heckman and Edward Leamer (eds.) *Handbook of Econometrics*, Volume 6B, pp. 4875-5143.

Imbens, Guido M. and Jeffrey M. Wooldridge (2009), "Recent Developments in the Econometrics of Program Evaluation," *Journal of Economic Literature*, Vol. 47, No. 1, pp. 5-86.

Shadish, W.R., Cook, T.D., e Campbell, D.T. 2002. *Experimental and Quasi-Experimental Designs for Generalized Causal Inference*. Boston: Houghton-Mifflin.

Wooldridge, J.M. 2002. *Econometric Analysis of Cross-Section and Panel Data*. Cambridge: MIT Press.

## **1. Natural Experiments, the Method of Differences in Differences and Synthetic Controls**

Abadie, A. (2005), "Semiparametric Difference-in-Differences Estimators," *Review of Economic Studies*

Abadie, A. Gardeazabal, JThe Economic Costs of Conflict:A Case Study of the Basque Country, *American Economic Review* 2003

Ashenfelter, O. and D. Card (1985), "Using the Longitudinal Structure of Earnings to Estimate the Effects of Training Programs," *Review of Economics and Statistics*, vol. 67, 648-660.

Athey, Susan e G. Imbens. 2006. Identification and Inference in Non-Linear Difference-in-Differences Models. *Econometrica* 74(2) March.

Card, D. (1990), "The Impact of the Mariel Boatlift on the Miami Labor Market," *Industrial and Labor Relations Review*, vol. 44, 245-257.

Card, D. and A. B. Krueger (1994), "Minimum Wages and Employment: A Case Study of the Fast-Food Industry in New Jersey and Pennsylvania," *American Economic Review*, vol. 84, 772-793.

Duflo E. (2001), "Schooling and Labor Market Consequences of School Construction in Indonesia: Evidence from an Unusual Policy Experiment," *American Economic Review*, vol. 91, 795-813.

Meyer, B. D. (1995), "Natural and Quasi-Experiments in Economics," *Journal of Business & Economic Statistics*, vol. 13, 151-161.

Rosenweig, M. e K. Wolpin. 2000. Natural `Natural Experiments' in Economics. *Journal of Economic Literature*.

## **2. Non random experiments: selection on unobservables**

### **2.1. The instrumental variables method**

Abadie, A. (2003), "Semiparametric Instrumental Variable Estimation of Treatment Response Models," *Journal of Econometrics*, vol. 113, 231-263.

Angrist, J., G. W. Imbens and D. Rubin, (1996), "Identification of Causal Effects Using Instrumental Variables," (with discussion) *Journal of the American Statistical Association* vol 91, no 434, 444-472.

Angrist, J. D. (1990), "Lifetime Earnings and the Vietnam Era Draft Lottery: Evidence from Social Security Administrative Records," *American Economic Review*, vol. 80, 313-336.

Angrist J. D. and A. Krueger (1991), "Does Compulsory School Attendance Affect Schooling and Earnings?," *Quarterly Journal of Economics*, vol. 106, 979-1014.

Angrist, J. 2004. Treatment Effect Heterogeneity in Theory and Practice. *Economic Journal*. 114: C52-C83.

Imbens, G. W. & J. D. Angrist. (1994). Identification and estimation of local average treatment effects. *Econometrica*, 62, 467-475

## **2.2. Regression Discontinuity Designs -RDD**

Buddelmeyer, H. e E. Skoufias. Na Evaluation of the Performance of Regression Discontinuity Design on PROGRESSA. *IZA Discussion Paper Series* n. 827, 2003.

DiNardo, John e D. S. Lee. The Impact of Unionization on Establishment Closure: A Regression Discontinuity Analysis of representation Elections. *NBER Working paper Series* n. 8993, 2002.

Hahn, J. P. Todd and H. Van Der Klaauw. 2001. Identification and Estimation of Treatment Effects with a Regression-Discontinuity Design. *Econometrica* 69: 201-209.

Imbens, G. W. e T. Lemieux. 2008. Regression Descontinuity Designs: A Guide to Practice. *Journal of Econometrics*, vol. 142, issue 2: 615-635.

McCrary, Justin. 2008. "Manipulation of the Running Variable in the Regression Discontinuity Design: A Density Test." *Journal of Econometrics*, 142(2): 698-714.

Van Der Klaauw. 2002 .A Regression-discontinuity Evaluation of the Effect of Financial Aid Offers on College Enrollment., *International Economic Review*. 43(4).

*Journal of Econometrics*, vol. 142 , issue 2. Edição especial sobre RDD

## **2.3. Heckman Selection and Marginal Treatment Effects**

Heckman, J. (2001) Micro Data, Heterogeneity, and the Evaluation of Public Policy. *Journal of Political Economy*, v. 109, n. 4. Segunda Parte.

Heckman, James J. (1979) Sample Selection Bias as a Specification Error. *Econometrica*. 47(1): 153-161.

Heckman, J. and E. Vytlacil (2005) Structural Equations, Treatment Effects and Econometric Policy Evaluation. *Econometrica*. 73(3), 669-738.

Heckman, J. and S. Urzúa (2010), Comparing IV with structural models: What simple IV can and cannot identify, *Journal of Econometrics*, v. 156.

## 2.4. Distributional Treatment Effects and Partial Identification

Abadie, A. (2002), "Bootstrap Tests for the Effects of a Treatment on the Distribution of an Outcome Variable," *Journal of the American Statistical Association*, vol. 97, 284-292.

Abadie, A., J. D. Angrist and G. W. Imbens (2002), "Instrumental Variable Estimation of the Effects of Subsidized Training on the Quantiles of Trainee Earnings," *Econometrica*, vol. 70, 91-117.

Bitler, M., J. Gelbach, and H. Hoynes, (2006), "What Mean Impacts Miss: Distributional Effects of Welfare Reform Experiments," *American Economic Review*.

Firpo, S. "Efficient Semiparametric Estimation of Quantile Treatment Effects" (2007), *Econometrica*.

Firpo, S. "Identification and Estimation of Distributional Impacts of Interventions Using Changes in Inequality Measures" (2008), typescript.

Manski, C. (1990) "Nonparametric Bounds on Treatment Effects," *American Economic Review*, Vol. 80, No. 2, 319-323

### GRADING

Written final exam: 40%  
Take home exams: 20%  
Presentations: 40%

### PROFESSOR - EMAILS

### DETAILED PROGRAM

Class	Topic	
-------	-------	--

1		Failure of Conditional Independence and the Diff-in Diff		
2		Diff-in-diff		
3		Synthetic Control		
4		Synthetic Control		
5		Seminars		
6		Seminars		
7		IV-LATE		
8		IV-LATE		
9		RDD		
10		RDD		
11		Heckman Selection and Marginal Treatment Effects		
12		Distributional and Multiple Treatment Effects		
13		Seminars		
14		Seminars		
15		Final Exam		