

## Syllabus

[cmcd.economia@fgv.br]

**Course: Econometrics IV**  
**Professor: João Paulo Pessoa**

**2017 THIRD QUARTER**

### PROGRAM

The aim of the course is to present the main econometric methods for panel data analysis. The course encompasses theory and empirical applications. As part of the evaluation, students will conduct empirical analysis in which they need to implement the econometric tools learned in the course.

The basic reference is the book “Econometric Analysis of Cross-Section and Panel Data” from Jeffrey Wooldridge (2002).

### BIBLIOGRAPHY

Arellano, M. (2003). “Panel Econometrics”, Oxford University Press, New York.

Wooldridge, Jeffrey M. (2002) “Econometric Analysis of cross-section and panel data”, The MIT Press, London, England.

#### Additional References

Aguirregabiria, Victor & Mira, Pedro, 2010. "Dynamic discrete choice structural models: A survey," *Journal of Econometrics*, Elsevier, vol. 156(1), pages 38-67, May.

Arellano, M. & Bond, S. (1991) “Some tests of specification for panel data: Monte Carlo Evidence and an application to employment equations”, *The Review of Economic Studies*, vol.58, num.2, pp.277-297.

Bond, Stephen (2003) “Dynamic Panel Data models: A guide to micro data methods and practice”, *Working Paper*, Center for microdata methods and practice, CWP09/02.

Gary, C. (1984). “Panel Data”, Ch. 22 of *Handbook of Econometrics*, Volume 2, Elsevier.

Hausman, J. and Taylor, W. (1981): “Panel data and unobservable individual effects”, *Econometrica*, Vol. 49, num 6, nov, pp.1377-1398.

Horowitz, J. (2001): “The Bootstrap”, Ch. 52 of *Handbook of Econometrics*, Volume 5, Elsevier.

Imbens/ Lemieux “Regression Discontinuity Designs: A Guide to Practice” NBER Working Paper No. 13039 Issued in April 2007 (<http://www.nber.org/papers/w13039>)

Imbens/Wooldridge, Lecture Notes 13, Summer '07 ([http://www.nber.org/WNE/lect\\_13\\_weakmany\\_iv.pdf](http://www.nber.org/WNE/lect_13_weakmany_iv.pdf))

Lee/Lemieux Regression Discontinuity Designs in Economics, NBER Working Paper No. 14723 (<http://www.nber.org/papers/w14723> )

Nijman & Verbeek (1992) “Testing for selectivity bias in panel data models”, *International Economic Review*, vol.33, num 3, aug, pp.681-703.

Pagan, A. and Ullah, A. (1999), *Nonparametric Econometrics*, Cambridge Univ. Press.

Wooldridge, Jeffrey M. (2003) “Introductory Econometrics: a modern approach”, Thomson: South-Western, 2nd edition.

### GRADING

Problem Sets: 30% of the final grade.

Final Assignment: 70% of the final grade.

## **PROFESSOR - EMAILS**

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## **DETAILED PROGRAM**

Topic 1: Introduction to panel data and basic linear model for panel data (Pooled OLS)

References: Wooldridge (2002), chapter 4, sections 4.1 e 4.2 e chapter 7.

Topic 2: Linear models for panel data with unobserved effects: fixed effects and random effects.

References: Wooldridge (2002), chapter 10, sections 10.1 to 10.7; Arellano (2003), chapters 2 and 3.

Topic 3: Instrumental variables in panel data - System 2SLS and GMM estimator.

References: Wooldridge (2002), chapter 8, sections 8.2 and 8.3 and subsection 8.5.2; Arellano (2003), chapter 4.

Topic 4: Dynamic models and predetermined variables

References: Wooldridge (2002), section 11.1; Arellano (2003), chapter 7.

Topic 5: Duration Models

References: Wooldridge (2002), chapter 20.

Topic 6: Discrete Choice Models

References: Wooldridge (2002), chapter 15, section 15.8.

Topic 7: Dynamic Discrete Choice Models

References: Lecture Notes