MASTERS SYLLABUS

2181 – Policy Evaluation, 3.5 ECTS

Semester 2 First Half (T3)

2021/22

Pedro C. Vicente

Pedro Vicente is a Full Professor at Nova SBE and the founding Scientific Director of NOVAFRICA. He holds a Licenciatura in Economics from Catolica-Lisbon, an M.Sc. in Economics from the LSE, and M.A. and Ph.D. degrees in Economics from the University of Chicago. Pedro is affiliated with BREAD and the IGC, having held previous posts at the University of Oxford and Trinity College Dublin. He has published in top journals in economics, including the American Economic Review, Review of Economics and Statistics, Economic Journal, and Journal of Development Economics. His research focuses on the political economy of development with a special interest in Africa. Pedro designed and conducted field projects, including randomized controlled trials, in Angola, Cape Verde, Guinea-Bissau, Mozambique, Nigeria, and Sao Tome and Principe – these projects were funded by various international agencies like DFID, USAID, 3ie, IZA, and FCT. He is currently working on community-driven development as well as education in Angola, incentives in the health sector in Guinea-Bissau, and conflict as well as urbanization in Mozambique.

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LECTURES: Tuesdays 11:00 - 12:30 and Fridays 12:30 - 14:00, Room D-105.

INSTRUCTOR OFFICE HOURS: Wednesdays 4-5pm, online – please email first.

ANNOUNCEMENTS: TBD.

GRADER: Matilde Grácio, matilde.g.gracio@novasbe.pt, office hours are Tuesdays 3-4pm.

COURSE UNIT AIMS. (Purpose of the course using broad, general terms)

This course will give students an overview of the main policy evaluation methods. The perspective will be microeconomic and applied. We only employ econometric derivations when needed to help intuition. The course aims to strengthen the methodological background of students interested in conducting applied research.

COURSE UNIT CONTENT. (Main topics covered in the course)

The course will begin by defining the policy evaluation question, introducing the idea of causality and randomization. It will then cover propensity score matching, difference-in-differences, instrumental variable estimation, and regression discontinuity design. For each topic we will have students replicating results in a well-known empirical paper and presenting their efforts in class.

LEARNING OBJECTIVES. Upon completion of this course, students should be able to:

A. Knowledge and Understanding
   - **Understand the policy evaluation question and the idea of causality.**
   - **Know the main methodological solutions to the policy evaluation question.**

B. Subject-Specific Skills
   - **Implement the basic structure of the different empirical strategies in Stata.**

C. General Skills
   - **Confidently identify best methods for different applied research questions.**

DEMONSTRATION OF THE COHERENCE OF THE SYLLABUS WITH COURSE UNIT AIMS

The syllabus covers the main methods of Policy Evaluation. We base our approach on research contributions and replications of econometric work.

TEACHING AND LEARNING METHODS.

There will be two classes of 1 hour and 20 minutes per week, based on slides. For each topic, a general overview of the empirical methods will be given. Applications taken from recent research will be studied in greater detail, namely through presentations of replications conducted by students. Weekly applied work will enable students to gain Stata skills.

DEMONSTRATION OF THE COHERENCE OF THE TEACHING METHODS WITH COURSE LEARNIG OBJECTIVES

Taking into consideration the fundamental purpose of this course, the learning methods most suitable to this course are:

- **the method learning-by-examples (demonstration)**
- **learning-by-doing (practice by doing)**

The teaching methodologies adopted are intended to stimulate the students' ability to go from theory to practice, through the apprehension of concepts, tools and methodologies which are explained in the course. Thus, they contribute to the process of individual and group learning and develop critical analysis.

ASSESSMENT

Replication and presentation of the results in a research paper (35% of the grade): To be done in groups (specific size depending on class size) for the duration of approximately 45 minutes. Each group will prepare slides (can be very short) and replication files that will then be posted on the class website. Replication files will include data files, commented Stata do file(s) referring to the tables in the paper, and corresponding Stata log file(s). Please send the replication files to both the lecturer and the grader. During the class presentation and discussion students should: (i) provide motivation to the research question and produce a clear presentation of the empirical results, for approximately 15min, (ii) comment on learning from replication difficulties, for approximately 15 min, and (iii) provide appropriate responses to questions from the class, for approximately 15 min.

Problem sets (25% of the grade): To be done in small groups. Please send all assignments to the grader of the course by the due date. These are Stata exercises, so students should provide commented do files, with corresponding log files.

Final exam (40% of the grade).

Participation in class is taken into account in marginal cases: All students are required to read the papers (for the applications) in advance, and to comment on the presentations during class.

BIBLIOGRAPHY.

I General readings

Khandker, R. Shahidur, Gayatri B. Koolwal, and Hussain A. Samad (2010), Handbook on Impact Evaluation: Quantitative Methods and Practices, The World Bank;
Angrist, Joshua D., and Jörn-Steffen Pischke (2008), Mostly Harmless Econometrics: An Empiricist's Companion, Princeton University Press;
Deaton, Angus (2010), Instruments, Randomization, and Learning about Development, Journal of Economic Literature, 48(June): 424–455;
Wooldridge, Jeffrey (2001), Econometric Analysis of Cross Section and Panel Data, MIT Press.

II The methods

1. The Policy Evaluation Question and Randomization

(Chapters 2, 3, and 12) Khandker, R. Shahidur, Gayatri B. Koolwal, and Hussain A. Samad (2010), Handbook on Impact Evaluation: Quantitative Methods and Practices, The World Bank;
Duflo, Esther, Rachel Glennerster, and Michael Kremer (2006), Using Randomization in Development Economics Research: A Toolkit, NBER Technical Working Paper 333;

Heckman, James J., and Edward Vytlacil (2005), Structural Equations, Treatment Effects, and Econometric Policy Evaluation, Econometrica, 73(3): 669–738.
Krueger, Alan (1999), Experimental Estimates of Education Production Functions, Quarterly Journal of Economics, 114(2): 497-532.

Application:
Cole, Shawn, Xavier Giné, Jeremy Tobacman, Petia Topalova, Robert Townsend, and James Vickery (2013), Barriers to Household Risk Management: Evidence from India, American Economic Journals: Applied Economics, 5(1): 104-135.
Replication materials available at the AEJ/AE website.

2. Propensity Score Matching

(Chapters 4, and 13) Khandker, R. Shahidur, Gayatri B. Koolwal, and Hussain A. Samad (2010), Handbook on Impact Evaluation: Quantitative Methods and Practices, The World Bank;
Becker, Sascha, and Andrea Ichino (2002), Estimation of Average Treatment Effects Based on Propensity Scores, Stata Journal, 2(4): 358–377;
Heckman, James J., Hidehiko Ichimura, and Petra Todd (1997), Matching as an Econometric Evaluation Estimator: Evidence from Evaluating a Job Training Programme, Review of Economic Studies, 64(4): 605–654;
Heckman, James J., Hidehiko Ichimura, and Petra Todd (1998), Matching as an Econometric Evaluation Estimator, Review of Economic Studies, 65(2): 261–294;
Rosenbaum, Paul R., and Donald B. Rubin (1983), The Central Role of the Propensity Score in Observational Studies for Causal Effects, Biometrika, 70(1): 41–55.

Application:
Dehejia, Rajeev, and Sadek Wahba (2002), Propensity Score Matching Methods for Non-experimental Causal Studies, Review of Economics and Statistics, 84(1): 151-161;
Replication materials available at:
http://users.nber.org/~rdehejia/data/nswdata2.html
With reference to:
LaLonde, Robert (1986), Evaluating the Econometric Evaluations of Training Programs with Experimental Data, American Economic Review, 76: 604-620;
Smith, Jeffrey, and Petra Todd (2005), Does Matching Overcome LaLonde's Critique of Nonexperimental Estimators?, Journal of Econometrics, 125: 305-353.

3. Difference-in-differences

(Chapters 5, and 14) Khandker, R. Shahidur, Gayatri B. Koolwal, and Hussain A. Samad (2010), Handbook on Impact Evaluation: Quantitative Methods and Practices, The World Bank;
Bertrand, Marianne, Esther Duflo, and Sendhil Mullainathan (2004), How Much Should We Trust Differences-in-Differences Estimates?, Quarterly Journal of Economics, 119(1): 249–275;

Duflo, Esther (2001), Schooling and Labor Market Consequences of School Construction in Indonesia: Evidence from an Unusual Policy Experiment, American Economic Review, 91(4): 795-913.

Application:
Card, David, and Alan Krueger (1994), Minimum Wages and Employment: A Case Study of the Fast-Food Industry in New Jersey and Pennsylvania, American Economic Review, 84: 772-793.

Replication materials available at: http://davidcard.berkeley.edu/data_sets.html

4. Instrumental Variable Estimation

(Chapters 6, and 15) Khandker, R. Shahidur, Gayatri B. Koolwal, and Hussain A. Samad (2010), Handbook on Impact Evaluation: Quantitative Methods and Practices, The World Bank;
Angrist, Joshua, and William Evans (1998), Children and Their Parents' Labor Supply: Evidence from Exogenous Variation in Family size, American Economic Review, 88: 450-477;
Angrist, Joshua, Guido Imbens, and Donald Rubin (1996), Identification of Causal Effects Using Instrumental Variables, Journal of the American Statistical Association, 91(434), 444-455;

See Comments by Heckman, Moffitt, and Robins and Greenland.
Imbens, Guido, and Joshua Angrist (1994), Identification and Estimation of Local Average Treatment Effects, Econometrica, 62(2): 467–476;
Heckman, James J. (1997), Instrumental Variables: A Study of Implicit Behavioral Assumptions Used in Making Program Evaluations, Journal of Human Resources, 32(3): 441–462;

See Comment by Angrist and Imbens and reply by Heckman.

Application:
Angrist, Joshua and Alan Krueger (1991), Does Compulsory School Attendance Affect Schooling And Earnings?, Quarterly Journal of Economics, 106(4): 979-1014;

Replication materials available at:
http://economics.mit.edu/faculty/angrist/data1/data/angkru1991
Bound, John, David Jaeger, and Regina Baker (1995), Problems with Instrumental Variables Estimation When the Correlation Between the Instruments and the Endogeneous Explanatory Variable is Weak, Journal of the American Statistical Association, 90(430): 443-450.

5. Regression Discontinuity Design

(Chapters 7, and 16) Khandker, R. Shahidur, Gayatri B. Koolwal, and Hussain A. Samad (2010), Handbook on Impact Evaluation: Quantitative Methods and Practices, The World Bank;

Angrist, Joshua, and Victor Lavy (1999), Using Maimonides Rule to Estimate the Effect of Class Size on Scholastic Achievement, Quarterly Journal of Economics, 114(2): 533-575.
Hahn, Jinyong, Petra Todd, and Wilbert van der Klaauw (2001), Identification of Treatment Effects by Regression Discontinuity Design, Econometrica 69 (1): 201–209.
Lee, David S., and Thomas Lemiueux (2010), Regression Discontinuity Designs in Economics, Journal of Economic Literature, 48(2): 281-355.

Application:
Ludwig, Jens and Douglas L. Miller (2007), Does Head Start Improve Children's Life Chances? Evidence from a Regression Discontinuity Design, Quarterly Journal of Economics, 122(1): 159-208.
Replication materials available at:
http://old.econ.ucdavis.edu/faculty/dlmiller/statafiles/

RESOURCES.
A course webpage (moodle) will be used to disseminate information about the course and the slides used in class.