

Paris School of Economics – Master PPD

# Microsimulation and Evaluation of Public Policies

## Syllabus

Mahdi Ben Jelloul, Antoine Bozio and Anne-Sophie Robillard

**Lecture period:** Second Semester (Jan-March 2019).

**Lecturers:**

- Mahdi Ben Jelloul, [mahdi.benjelloul@ipp.eu](mailto:mahdi.benjelloul@ipp.eu)
- Antoine Bozio, [antoine.bozio@ipp.eu](mailto:antoine.bozio@ipp.eu)
- Anne-Sophie Robilliard, [Robilliard@dia.dial.prd.fr](mailto:Robilliard@dia.dial.prd.fr)

**Language of the course:** English.

### Practical information

**Lecture's room:** Campus Jourdan – room TBA.

**Course timetable:** There will be 24 hours of lectures, split into 8 3-hour sessions.

**Course websites:** <http://www.parisschoolofeconomics.info/>

### Content

The past decade has seen the rapid development of microsimulation models (MsM) and techniques for the evaluation of public policies. MsM are models that start with large-scale representative surveys of households or individuals to which are added several kinds of information: data from other surveys and databases, imputations and statistical matches, programme rules, and behavioural assumptions. The purpose of this course is to present microsimulation models and techniques that have been implemented and used both in developed and developing countries.

### Related Courses at PSE

- **Public Economics** (Antoine Bozio, Julien Grenet and Thomas Piketty): for an overview of public economics at graduate level, including tax and benefit systems.

## Requirements and assessment

To validate the course, students are required

1. to attend all lectures and actively participate in class;
2. to read all required readings (noted by \*) ;
3. to take the exam.

The exam will be based upon a good working knowledge of all the material that is presented in the lecture slides and the tutorials. Please ask during the classes if there is anything unclear in this material.

## Course outline

### Part I: Tax and benefit models

1. Static microsimulation models [Antoine Bozio]
2. Tutorial (1) [Mahdi Ben Jelloul]
3. Behavioural and dynamic microsimulation models [Antoine Bozio]
4. Tutorial (2) [Mahdi Ben Jelloul]

### Part II. Modelling macro shocks and policies

1. Evaluating the impact of macro shocks and policies on poverty and income distribution [Anne-Sophie Robilliard]
2. Computable General Equilibrium models [Anne-Sophie Robilliard]
3. Integrating CGE and Microsimulation models [Anne-Sophie Robilliard]
4. Tutorial : Integrating CGE and Microsimulation models [Anne-Sophie Robilliard]

## References

### Main textbooks

- O’Donoghue, C. (2014), *Handbook of Microsimulation Modelling*, Emerald publishing.
- Bourguignon F., M. Bussolo and L.A. Pereira da Silva (2008), *The Impact of Macroeconomics Policies on Poverty and Income Distribution. Macro-Micro Evaluation Techniques and Tools*, Palgrave Macmillan and World Bank.
- Bourguignon F. and L.A. Pereira da Silva (2003), *The Impact of Economics Policies on Poverty and Income Distribution. Evaluation Techniques and Tools*, Oxford University Press and World Bank.

## 1. Static microsimulation models

- Atkinson, A. B., Bourguignon, F. and Chiappori, P.-A. (1988), “What Do We Learn about Tax Reform from International Comparisons? France and Britain”, *European Economic Review* 32 (2): 343–52.
- Atkinson, A. B., Bourguignon, F., O’Donoghue, C., Sutherland, H. and Utili, F. (2002) “Microsimulation of Social Policy in the European Union: Case Study of a European Minimum Pension”. *Economica* 69 (274), pp. 229–43.
- Barlet, M., Blanchet, D. and T. Le Barbanchon (2009) “Microsimulation et modèles d’agents: une approche alternative pour l’évaluation des politiques d’emploi”, *Économie et Statistique* 429 (1): 51–76.
- Blanchet, D., C. Hagneré, F. Legendre, and F. Thibault (2015), “Microsimulations statique et dynamique appliquées aux politiques fiscales et sociales: modèles et méthodes”, *Economie et Statistique*, no. 481: 5–30.
- \* Bourguignon, F. and Spadaro, A. (2006), “Microsimulation as a Tool for Evaluating Redistribution Policies”, *Journal of Economic Inequality*, vol.4, No. 1, pp. 77–10.
- Bozio, A., M. Guillot, and Q. Lafféter (2015) “Portée et limites du modèle TAXIPP pour l’analyse redistributive des prélèvements obligatoires”, *Économie et Statistique*, no. 481: 31–50.
- Callan, T. and H. Sutherland (1997) “The Impact of Comparable Policies in European Countries: Microsimulation Approaches”, *European Economic Review*, 41 (3-5): 627–33.
- Orcutt, G. (1957) “A New Type of Socio-Economic System”, *The Review of Economics and Statistics* 39 (2): 116-23.
- Orcutt, G. (1960) “Simulation of Economic Systems”. *The American Economic Review* 50, no. 5, pp. 894–907.
- Sutherland, H. (1991) “Constructing a Tax-Benefit Model: What Advice Can One Give?”, *Review of Income and Wealth* 37 (2): 199–219.
- Sutherland, H. (1998) “Les modèles statiques de microsimulation en Europe dans les années 90”, *Économie et statistique* 315, no. 1, pp. 35–50.

## 2. Behavioural and dynamic microsimulation models

- Bargain, O., Dolls, M., Neumann, D., Peichl, A, and Siegloch, S. (2011) “Tax-Benefit Systems in Europe and the US: Between Equity and Efficiency” IZA Discussion Papers 5440.
- Blundell, R., A. Duncan, J. McCrae, and C. Meghir (2000), “The Labour Market Impact of the Working Families’ Tax Credit”, *Fiscal Studies* 21 (1): 75–104.
- Blundell, R., and Shephard, A. (2012), “Employment, Hours of Work and the Optimal Taxation of Low-Income Families”, *Review of Economic Studies* 79 (2): 481–510.
- Brewer, M., Saez, E. and A. Shephard (2010) “Means Testing and Tax Rates on Earnings”, in *The Mirrlees Review: Reforming the Tax System for the 21st Century*, (Mirrlees et al. eds), Oxford University Press.
- Creedy, J., and Duncan, A. (2002), “Behavioural Microsimulation with Labour Supply Responses”, *Journal of Economic Surveys* 16 (1): 1-39.
- Duncan, A., and C. Giles (1996) “Labour Supply Incentives and Recent Family Credit Reforms”, *The Economic Journal* 106 (434): 142.

- \* Immervoll, H., Kleven, H., Kreiner, C. and E. Saez (2007) “Welfare Reform in European Countries: A Microsimulation Analysis”, *The Economic Journal* 117 (516): 1–44.
- Li, J. and C. O’Donoghue (2013) “A Survey of Dynamic Microsimulation Models: Uses, Model Structure and Methodology”, *International Journal of Microsimulation* 6 (2): 3–55.
- Morand, E., L. Toulemon, S. Pennec, R. Baggio, and F. Billari (2010) “Demographic Modelling: The State of the Art”, *SustainCity Working Paper*, Ined, Paris, no. 2.1a.

## Part II. Modelling macro shocks and policies

- Robilliard A.-S. and Robinson S. (2003) “Reconciling Household Surveys and National Accounts Data Using a Cross Entropy Estimation Method ”, *The Review of Income and Wealth*, 49(3), p. 395-406.
- Cogneau D. and Robilliard A.-S. (2008) “Poverty Alleviation Policies in Madagascar: A Micro-Simulation Model ”, in F. Bourguignon, M. Bussolo et L. Pereira da Silva, *The Impact of Macroeconomic Policies on Poverty and Income Distribution*, World Bank et Palgrave Macmillan, New York, p. 213-246.
- Robilliard A.-S., Bourguignon F. and Robinson S. (2008) “Crisis and Income Distribution: a Micro-Macro Model for Indonesia ”, in F. Bourguignon, M. Bussolo et L. Pereira da Silva, (eds), *The Impact of Macroeconomic Policies on Poverty and Income Distribution*, World Bank et Palgrave Macmillan, New York, p. 93-118.
- Cogneau D. and Robilliard A.-S. (2007) “Growth, distribution and poverty in Madagascar: learning from a microsimulation model in a general equilibrium framework”, in A. Spadaro (ed), *Microsimulation as a tool for the evaluation of public policies: methods and applications*, chapter 3, Fundacion BBVA, Bilbao, p. 75-116.
- Robilliard A.-S. and Robinson S. (2006) “Social Impact of a WTO Agreement in Indonesia”, in T. Hertel et L. Winters (eds), *Putting Development Back into the Doha Agenda: Poverty Impacts of a WTO Agreement*, World Bank et Palgrave Macmillan, New York, p. 319-340.
- Bourguignon F., Robilliard A.-S. and Robinson S. (2005), ”Representative versus real households in the macro-economic modeling of inequality”, in T. Kehoe, T.N. Srinivasan, J. Whalley (eds), *Frontiers in Applied General Equilibrium Modeling: Essays in Honor of Herbert Scarf*, Cambridge University Press, Cambridge, p. 219-254.
- Cogneau D., Grimm M. and Robilliard A.-S. (2003), ”Evaluating poverty reduction policies: the contribution of micro-simulation techniques”, in J.-P. Cling, M. Razafindrakoto, F. Roubaud (eds), *The New International Strategies for Poverty Reduction*, chap. XIV, Routledge, London/New York, p. 340-370.