

# Massimo Tavoni

## PROFESSIONAL AND ACADEMIC EXPERIENCES

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- Associate Professor, Department of Management, Politecnico di Milano, Italy
- Coordination, 'Mitigation' research programme, Fondazione Eni Enrico Mattei (FEEM), Italy

### Previous Appointments:

- Fellow, Center for Advanced Studies in the Behavioural Sciences (CASBS), Stanford University (2014-15)
- Director, Climate Impacts and Policy Division, Centro Euro-Mediterraneo sui Cambiamenti Climatici (CMCC), Italy (2013-2014)
- Deputy Director, Climate Change and Sustainable Development research programme , Fondazione Eni Enrico Mattei (FEEM), Italy (2012-2014)
- Senior Researcher, Fondazione Eni Enrico Mattei (FEEM), Italy (2010-2012)
- Post-doctoral Research Associate, Princeton University, USA (2008-2010)

## EDUCATION

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- Catholic University of Milan, PhD Political Economics (European Doctoral Program (EDP)) 2005-2008  
Economics of climate change. Principal advisor: Carlo Carraro
- London School of Economics  
M.Sc.Econometrics and Mathematical Economics 1999-2001
- University of Bologna,  
Laurea cum Laude in Engineering 1993-1998

## AWARDS AND RECOGNITION

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- 2013: European Research Council starting grant (ERC)
- 2012: Deputy Editor of the journal "Climatic Change"
- 2012: Member of the scientific committee of the Integrated Assessment Modeling Consortium
- 2011: Coordinator the EU FP7 project 'LIMITS'

2011: Member of the steering committee of the Energy Modelling Forum 27  
 2010: Lead Author for the IPCC 5th assessment report, WGIII  
 2010: Best post-doctoral paper award of the Carbon Mitigation Initiative at Princeton University  
 2009: Coordinator the EU FP7 project PLANETS'  
 2009: Paper included in "Time" magazine's list of "The 50 Best Inventions of 2009"  
 2009: Co-director of the International Energy Workshop  
 2007: Second prize for best paper at the 20th World Energy Congress, Rome  
 2000: Scholarship from the London School of Economics for post-graduate studies  
 1999: Scholarship from the University of Bologna for postgraduate studies

## PUBLICATIONS

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### *Journals and Books (H-index: 24 (Google Scholar), 15 (Scopus))*

Berger, L., J. Emmerling and M. Tavoni, 2016. "Managing Catastrophic Climate Risks under Model Uncertainty Aversion", forthcoming *Management Science*

1. Witajewski-Baltvilks, J., Verdolini, E. & Tavoni, M. Bending the learning curve. *Energy Economics* (2015). doi:10.1016/j.eneco.2015.09.007
2. van Sluisveld, M. A. E. et al. Comparing future patterns of energy system change in 2 °C scenarios with historically observed rates of change. *Global Environmental Change* 35, 436–449 (2015).
3. Tavoni, M. et al. Post-2020 climate agreements in the major economies assessed in the light of global models. *Nature Clim. Change* 5, 119–126 (2015).
4. Stechow, C. von et al. Integrating Global Climate Change Mitigation Goals with Other Sustainability Objectives: A Synthesis. *Annual Review of Environment and Resources* 40, 363–394 (2015).
5. Drouet, L., Bosetti, V. & Tavoni, M. Selection of climate policies under the uncertainties in the Fifth Assessment Report of the IPCC. *Nature Clim. Change* 5, 937–940 (2015).
6. McJeon, H. et al. Limited impact on decadal-scale climate change from increased use of natural gas. *Nature* 514, 482–485 (2014).
7. Kriegler, E. et al. The role of technology for achieving climate policy objectives: overview of the EMF 27 study on global technology and climate policy strategies. *Climatic Change* 123, 353–367 (2014).
8. Fuss, S. et al. Betting on negative emissions. *Nature Clim. Change* 4, 850–853 (2014).
9. Bowen, A., Campiglio, E. & Tavoni, M. A macroeconomic perspective on climate change mitigation: meeting the financing challenge. *Clim. Change Econ.* 05, 1440005 (2014).
10. Blanford, G. J., Kriegler, E. & Tavoni, M. Harmonization vs. fragmentation: overview of climate policy scenarios in EMF27. *Climatic Change* 123, 383–396 (2014).
11. Tavoni, M. & Socolow, R. Modeling meets science and technology: an introduction to a special issue on negative emissions. *Climatic Change* 118, 1–14 (2013).
12. Tavoni, M. et al. The distribution of the major economies' effort in the durban platform scenarios. *Clim. Change Econ.* 04, 1340009 (2013).
13. Mastrandrea, M. & Tavoni, M. Foreword to the special issue: climate change, extremes, and energy systems. *Climatic Change* 121, 1–2 (2013).
14. Kriegler, E. et al. What does the 2°C target imply for a global climate agreement in 2020? the limits study on durban platform scenarios. *Clim. Change Econ.* 04, 1340008 (2013).
15. Emmerling, J. & Tavoni, M. *Geoengineering and Abatement: A 'Flat' Relationship Under Uncertainty.* (Social Science Research Network, 2013).
16. Cian, E. D., Sferra, F. & Tavoni, M. The influence of economic growth, population, and fossil fuel scarcity on energy investments. *Climatic Change* 1–17 (2013). doi:10.1007/s10584-013-0902-5
17. Cian, E. D., Carrara, S. & Tavoni, M. Innovation benefits from nuclear phase-out: can they compensate the costs? *Climatic Change* 123, 637–650 (2013).

18. Chen, C. & Tavoni, M. Direct air capture of CO<sub>2</sub> and climate stabilization: A model based assessment. *Climatic Change* 118, 59–72 (2013).
19. Chakravarty, S. & Tavoni, M. Energy poverty alleviation and climate change mitigation: Is there a trade off? *Energy Economics* 40, Supplement 1, S67–S73 (2013).
20. Carraro, C., Longden, T., Marangoni, Giacomo & Tavoni, M. The Optimal Energy Mix in Power Generation and the Contribution from Natural Gas in Reducing Carbon Emissions to 2030 and Beyond. (Social Science Research Network, 2013). at <<http://papers.ssrn.com/abstract=2351322>>
21. Carraro, C., Cian, E. D. & Tavoni, M. Human Capital, Innovation, and Climate Policy: an Integrated Assessment. *Environ Model Assess* 19, 85–98 (2013).
22. Calvin, K. et al. A multi-model analysis of the regional and sectoral roles of bioenergy in near- and long-term co<sub>2</sub> emissions reduction. *Clim. Change Econ.* 04, 1340014 (2013).
23. Bosetti, V., Carraro, C., De Cian, E., Massetti, E. & Tavoni, M. Incentives and stability of international climate coalitions: An integrated assessment. *Energy Policy* 55, 44–56 (2013).
24. Tavoni, M., Chakravarty, S. & Socolow, R. Safe vs. Fair: A Formidable Trade-off in Tackling Climate Change. *Sustainability* 4, 210–226 (2012).
25. Tavoni, M., De Cian, E., Luderer, G., Steckel, J. C. & Waisman, H. The value of technology and of its evolution towards a low carbon economy. *Climatic Change* 1–19 (2012).
26. Massetti, E. & Tavoni, M. A developing Asia emission trading scheme (Asia ETS). *Energy Economics* 34, Supplement 3, S436–S443 (2012).
27. Jakob, M., Luderer, G., Steckel, J., Tavoni, M. & Monjon, S. Time to act now? Assessing the costs of delaying climate measures and benefits of early action. *Climatic Change* 1–21 (2012).
28. De Cian, E. & Tavoni, M. Do technology externalities justify restrictions on emission permit trading? *Resource and Energy Economics* 34, 624–646 (2012).
29. De Cian, E. & Massimo, T. Mitigation portfolio and policy instruments when hedging against climate policy and technology uncertainty. *Environmental Modeling and Assessment* 17, 123–136 (2012).
30. De Cian, E., Bosetti, V. & Tavoni, M. Technology innovation and diffusion in ‘less than ideal’ climate policies: An assessment with the WITCH model. *Climatic Change* 1–23 (2012).
31. Bosetti, V., Carraro, C. & Tavoni, M. Timing of Mitigation and Technology Availability in Achieving a Low-Carbon World. *Environmental and Resource Economics* 51, 353–369 (2012).
32. Blanford, G. J., Rose, S. K. & Tavoni, M. Baseline projections of energy and emissions in Asia. *Energy Economics* 34, Supplement 3, S284–S292 (2012).
33. Tavoni, M. & Zwaan, B. van der. Nuclear Versus Coal plus CCS: a Comparison of Two Competitive Base-Load Climate Control Options. *Environ Model Assess* 16, 431–440 (2011).
34. Tavoni, M., Cian, E. D., Luderer, G., Steckel, J. C. & Waisman, H. The value of technology and of its evolution towards a low carbon economy. *Climatic Change* 114, 39–57 (2011).
35. Tavoni, M., Chakravarty, S. & Socolow, R. Safe vs. fair: a formidable trade-off in tackling climate change. (Nota di lavoro//Fondazione Eni Enrico Mattei: Climate Change and Sustainable Development, 2011). at <<https://opus.zbw-kiel.de/dspace/handle/10419/53401>>
36. Massetti, E. & Tavoni, M. THE COST OF CLIMATE CHANGE MITIGATION POLICY IN EASTERN EUROPE AND FORMER SOVIET UNION. *Climate Change Economics* 02, 341–370 (2011).
37. Haurie, A., Tavoni, M. & Zwaan, B. C. C. van der. Modeling Uncertainty and the Economics of Climate Change: Recommendations for Robust Energy Policy. *Environ Model Assess* 17, 1–5 (2011).
38. Gennaioli, C. & Tavoni, M. Clean or ‘Dirty’ Energy: Evidence on a Renewable Energy Resource Curse. *Fondazione Eni Enrico Mattei Working Papers* 614 (2011).
39. Bosetti, V., Carraro, C., Duval, R. & Tavoni, M. What should we expect from innovation? A model-based assessment of the environmental and mitigation cost implications of climate-related R&D. *Energy Economics* (2011).
40. Tavoni, M. & Tol, R. S. J. Counting only the hits? The risk of underestimating the costs of stringent climate policy. *Climatic change* 100, 769–778 (2010).

41. Clarke, L. et al. International climate policy architectures: Overview of the EMF 22 International Scenarios. *Energy Economics* 31, S64–S81 (2009).
42. Chakravarty, S. et al. Sharing global CO2 emission reductions among one billion high emitters. *Proceedings of the National Academy of Sciences* 106, 11884–11888 (2009).
43. Carraro, C. et al. The incentives to participate in and the stability of international climate coalitions: a game theoretic approach using the WITCH Model. *Working Papers* (2009).
44. Bosetti, V., Carraro, C. & Tavoni, M. Climate change mitigation strategies in fast-growing countries: The benefits of early action. *Energy Economics* 31, Supplement 2, S144–S151 (2009).
45. Bosetti, V., Carraro, C. & Tavoni, M. A Chinese commitment to commit: can it break the negotiation stall? *Climatic Change* 97, 297–303 (2009).
46. Bosetti, V., Carraro, C., Sgobbi, A. & Tavoni, M. Delayed action and uncertain stabilisation targets. How much will the delay cost? *Climatic Change* 96, 299–312 (2009).
47. Bosetti, V. & Tavoni, M. Uncertain R&D, backstop technology and GHGs stabilization. *Energy Economics* 31, S18–S26 (2009).
48. Bosetti, V., Carraro, C., Massetti, E., Sgobbi, A. & Tavoni, M. Optimal energy investment and R&D strategies to stabilize atmospheric greenhouse gas concentrations. *Resource and Energy Economics* 31, 123–137 (2009).
49. Bosetti, V., Carraro, C., Sgobbi, A. & Tavoni, M. Modelling economic impacts of alternative international climate policy architectures: A quantitative and comparative assessment of architectures for agreement. (2008). at <[http://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=1281521](http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1281521)>
50. Bosetti, V., Carraro, C., Massetti, E. & Tavoni, M. International energy R&D spillovers and the economics of greenhouse gas atmospheric stabilization. *Energy Economics* 30, 2912–2929 (2008).
51. Tavoni, M., Sohngen, B. & Bosetti, V. Forestry and the carbon market response to stabilize climate. *Energy Policy* 35, 5346–5353 (2007).
52. Marschinski, R., Rossi, P., Tavoni, M. & Cocco, F. Portfolio selection with probabilistic utility. *Annals of Operations Research* 151, 223–239 (2007).
53. Bosetti, V., Carraro, C., Galeotti, M., Massetti, E. & Tavoni, M. WITCH A World Induced Technical Change Hybrid Model. *The Energy Journal* 27, 13–37 (2006).

#### INVITED PRESENTATIONS AND LECTURES

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- 2015: Yale University
- 2014: Stanford University, Yale University
- 2013: Bruegel Institute, Università della Svizzera Italiana
- 2012: University of Vigo, Renmin University
- 2011: Princeton University, Pompeu Fabra University, Economics for Energy Foundation
- 2010: Bocconi University, ETH Zurich, Bruegel Institute, Tsinghua University, European Bank of Reconstruction and Development (EBRD), Environmental Defense Fund (EDF), Princeton University
- 2009: Economic and Financial Committee of the United Nations General Assembly, International Energy Workshop
- 2008: Catholic University of Milan
- 2007: Princeton University, University of Padua