

**EMISSIONS TRADING IN THEORY AND PRACTICE**

Block seminar in the BSc program in Economics

Course language: English

Prerequisites: Markets and the Environment (can be taken concurrently), or equivalent

Examination: Seminar Paper (50%), presentation (30%), class room discussion (20%)

ECTS-Credits: 6

Instructor: Prof. Ulrich Wagner  
Email: [wagner@econ.uni-mannheim.de](mailto:wagner@econ.uni-mannheim.de)  
Office hours: Thu, 2 p.m. – 3 p.m.  
Office location: Room 211 in the economics building (L 7, 3-5)

Assistant: N.N.

Class dates: Thursday, February 16, 5:15 p.m. – 6:45 p.m., Room 3, L 9, 1-2  
Friday, May 19, 9 a.m. – 6 p.m., P 044, L7, 3-5  
Saturday, May 20, 9 a.m. – 6 p.m., P 044, L7, 3-5

Deadlines: April 26, 2017 Choice of a topic for the paper  
May 15, 2017 Paper is due

Syllabus

Since environmental policies were first implemented in industrialized countries more than four decades ago, the initial "command-and-control" approach has given way to more decentralized, price-based policies to regulate pollution emissions. A Pigouvian tax is a well-established such policy, but governments around the world are increasingly favoring "emissions trading" schemes, i.e. establishing a market where polluters can buy and sell emission permits.

Drawing on theoretical, empirical and experimental research, this seminar analyzes a variety of economic, political and environmental aspects of this policy: Environmental effectiveness and economic costs, impacts on market structure and on international competitiveness, incentives for innovation in clean technologies, optimal design of permit allocation mechanisms and market stabilizing interventions, as well as behavioral aspects.

Students will write a 10-page paper on a particular aspect and present their work in class.

### Required Readings

Kolstad, C. Environmental Economics. Chapter 13, p. 272-280, Ch. 14, pp. 289-293

Baumol, W. and W. Oates. The Theory of Environmental Policy. 2<sup>nd</sup> ed. Chapter 12.

Ellerman, A.D., Marcantonini, C. and A. Zaklan (2016). The European Union Emissions Trading System: Ten Years and Counting. *Review of Environmental Economics and Policy*, 10 (1): 89-107.

Martin, R., M. Muûls and U.J. Wagner (2016). The Impact of the European Union Emissions Trading Scheme on Regulated Firms: What Is the Evidence after Ten Years? *Review of Environmental Economics and Policy*, 10 (1): 129-148.

### Optional Reading

Perman, Roger, Yue Ma, Michael Common, David Maddison, James McGilvray: Natural Resource and Environmental Economics. Addison Wesley. 4<sup>th</sup> edition  
Chapters 5 & 6.

*Note: Some book chapters are available as pdf files on ILIAS*

### Topics

The following is a list of suggested topics, along with one or two citations that are meant to provide you with a starting point for your own literature search. If you want to work on a topic not listed here please speak to the instructor.

#### 1. Innovation

[Calel, R., and Dechezleprêtre, A. \(2015\). Environmental policy and directed technological change: Evidence from the European carbon market. \*Review of Economics and Statistics\* \(forthcoming\). DOI: 10.1162/REST\\_a\\_00470](#)

[Requate, Till, \(2005\), Dynamic incentives by environmental policy instruments--a survey, \*Ecological Economics\*, 54\(2-3\): 175-195.](#)

#### 2. Abatement

[Fowlie, M., Holland, S. P., and Mansur, E. \(2012\). What do emissions markets deliver and to whom? Evidence from Southern California's NO<sub>x</sub> trading program. \*American Economic Review\*, 102\(2\): 965-993.](#)

#### 3. Economic Performance: Employment, Profits, Output

[Chan, H. S., Li, S., and Zhang, F. \(2013\). Firm competitiveness and the European Union emissions trading scheme. \*Energy Policy\*, 63: 1056-1064.](#)

#### 4. Pass-Through and Windfall Profits

[Fabra, N., and Reguant, M. \(2014\). Pass-through of emissions costs in electricity markets. \*American Economic Review\* 104\(9\): 2872-2899.](#)

[James B. Bushnell & Howard Chong & Erin T. Mansur, 2013. "Profiting from Regulation: Evidence from the European Carbon Market," \*American Economic Journal: Economic Policy\*, vol. 5\(4\): 78-106.](#)

#### 5. International Competitiveness and Trade

[Ralf Martin & Mirabelle Muuls & Laure B. de Preux & Ulrich J. Wagner, 2014. "Industry Compensation under Relocation Risk: A Firm-Level Analysis of the EU Emissions Trading Scheme," \*American Economic Review\*, vol. 104\(8\): 2482-2508.](#)

#### 6. Gains from Trade and Trading Behavior

[Curtis Carlson & Dallas Burtraw & Maureen Cropper & Karen L. Palmer, 2000. "Sulfur Dioxide Control by Electric Utilities: What Are the Gains from Trade?" \*Journal of Political Economy\*, 108\(6\): 1292-1326.](#)

#### 7. Market power

[Hahn, R.W. \(1984\). Market Power and Transferable Property Rights, \*Quarterly Journal of Economics\* 99: 753-765.](#)

Montero, J.P. (2009). Market power in pollution permit markets. *Energy Journal*, Vol. 30 (2): 1-28.

#### 8. Permit Allocation

[Fowlie, M. and Perloff, J. \(2013\). Distributing Pollution Rights in Cap-and-Trade Programs: Are Outcomes Independent of Allocation? \*Review of Economics and Statistics\*, 95\(5\): 1640-1652.](#)

#### 9. Policy Interventions

[Neuhoff, K. et al. \(2015\). Is a Market Stability Reserve likely to improve the functioning of the EU ETS? Evidence from a model comparison exercise. \*Climate Strategies Report\* available online at <http://climatestrategies.org/publication/is-a-market-stability-reserve/>](#)