



Exchange programme Vrije Universiteit

Vrije Universiteit Amsterdam - Exchange programme Vrije Universiteit - 2020-2021

Environmental and Transport Economics

Course Code	E_EBE2_ETE
Credits	6
Period	P5
Course Level	300
Language Of Tuition	English
Faculty	School of Business and Economics
Course Coordinator	dr. G.C. van der Meijden
Examiner	dr. G.C. van der Meijden
Teaching Staff	prof. dr. E.T. Verhoef, dr. G.C. van der Meijden, dr. P.R. Koster, prof. dr. H.L.F. de Groot, dr. V.A.
Teaching method(s)	Seminar, Lecture, Instruction course

Course Objective

The course aims to teach the student to take market failures in the realm of environmental and transport economics seriously (Bridging Theory and Practice - Knowledge and Application). After taking this course, the student is able to characterize the relationship between government and market from an economic perspective. The student learns why, and under what conditions, the free market does not lead to an efficient allocation of goods, factors of production, and natural resource use. This course focuses on externalities (pollution, congestion), natural monopoly (e.g., railways), oligopoly (e.g., aviation and fossil fuels), public goods (e.g., environmental quality, infrastructure), and the management of renewable and non-renewable natural resource (e.g., fossil fuels, rare-earth elements, fisheries and forests).

The student learns to apply economic methods and techniques that are indispensable in this context for analysing market failures and evaluating associated policies (Academic and Research Skills). This also includes mathematical models and methods for empirically estimating the economic values of non-priced goods such as carbon emissions and time, and methods to judge the value of investment projects through, in particular, cost-benefit analysis.

After completing this course:

1. You can critically analyse the functioning and failure of markets and develop government policies to combat market failures.
2. You are able to explain how externalities can be "internalized" through Pigouvian taxation and tradable permits, both in first-best and second-best situations.
3. You are able to describe the causes and consequences of tax competition between governments and of market power in networks and to provide policy advice to combat this.

4. You are able to characterize the extraction path of natural resources in a market equilibrium and you are able to explain why and how this path differs from the socially optimal one.
5. You can apply economic methods and techniques to analyse market failures and evaluate associated policies.
6. You are able to make cost-benefit calculations and you can use valuation methods (such as discrete choice models and stated preferences).
7. You are able to present and discuss results from scientific articles in a comprehensible manner, both written and orally, together with and in front of your fellow students.
8. You are aware of the various difficulties that may arise in regulating markets in reality, and do you understand that simple "recipes", while useful to illustrate the possibilities, cannot simply be applied in practice.

Course Content

The premise that the free market automatically leads to an efficient allocation of goods and factors of production, and that, as a result, the government should not intervene in the market process, is often too simple a representation of reality. The course Environmental and Transport Economics deals with the complex relationship between "market" and "government" from the perspective of environmental and transport economics. In the course, general economic insights with regard to the relationship between "market" and "government" are developed and elaborated on the basis of practical and appealing examples.

At the core of the course is the concept of "externalities" as an economic cause of environmental problems such as pollution and overexploitation of natural resources. Policy instruments to combat these problems are discussed in the course. In addition, other forms of externalities are being investigated - in particular traffic jams and congestion in road traffic. But the course also deals with market failures arising from market power on railways ("natural monopoly"), in aviation ("oligopoly" and "contestable markets") and in energy supply ("cartels" such as OPEC); or because of public goods such as infrastructure. Finally, methods to empirically estimate the economic values of non-priced goods such as carbon emissions and time, and methods to make informed investment decisions (in particular cost-benefit analysis) are discussed and applied.

Teaching Methods

Lectures.
Instruction lectures.
Tutorials.

Method of Assessment

Written exam, individual assessment.
Assignments, group assessment.

Literature

Transport Economics: Syllabus "Markets and Governments: Transport Economic Applications".

Environmental Economics: Perman, P., Y. Ma, M. Common, D. Maddison, and J. McGilvray (2011), Natural Resource and Environmental Economics. Addison Wesley, Longman Ltd, 4th edition.

Recommended background knowledge

Microeconomics I and II; Quantitative Research Methods I and II; Regional and Urban Economics; Public Economics.