

Production Economics

28.9.2015 - 2.10.2015 at BOKU Vienna

Instructor

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Course Description

We provide a detailed description of the alternative primal and dual representations of production technology. For the primal, we start with single output technologies and the production function and then we consider functional representation for multi-input and multi-output technologies such as transformation and input and output distance functions. For the dual, we consider the cost, revenue and profit functions. Then we proceed with indirect representations of technology, both primal and dual, which are particularly useful when production units face budget or sales constraints. Last but not least we consider the directional distance functions. In all these cases, we pay special attention to the theoretical properties of the underlying functions and we show how we can use them to analyze the structure of production by means of returns to scale, various forms of the elasticity of substitution, and of course comparative statics results. The last part of the course is devoted to the application of these theoretical tools to empirical studies and in particular in estimating a production function or a system of cost, revenue or profit functions equations by means econometric methods.

Course Outline

1. Primal Representation of Production Technology: Production, Transformation, and Distance Functions
2. Dual Representation of Production Technology: Cost, Revenue and Profit Functions
3. Indirect Primal and Dual Representation of Production Technology:
4. Directional Distance Functions
5. Applied Production Analysis: Estimation of Cost and Profit Function System of Equations, Identification and Estimation of Production Functions

Teaching methods

Lectures (60%), presentations (20%), hands-on-exercises (20%)

Grading

assignments (33 %), participation (33 %), final exam (33%)

Credit points

3

Requirements

microeconomics (master level), calculus (undergraduate level)

Some Major References

- Beattie, B.R., Taylor, C.R. and M.J. Watts. *The Economics of Production*, 2nd Edition, Krieger Publ. Co., 2009.
- Berndt, E.R. *The Practice of Econometrics*, Addison Wesley, 1991, ch. 9.
- Chambers, R.G. *Applied Production Analysis: A Dual Approach*, Cambridge Univ. Press, 1988.
- Fare, R. and D. Primont *Multi-Output Production and Duality: Theory and Applications*, Kluwer Academic Publishers, 1995.
- Fare, R. and S. Grosskopf. Theory and Applications of Directional Distance Functions, *Journal of Productivity Analysis*, 2000, 13, 93-103.
- Fare, R. and D. Primont. Directional Duality Theory, *Economic Theory*, 2006, 29, 239-47.
- Griliches, Z. *Practicing Econometrics*, Edward Elgar, 1998, ch. 19.
- van Beveren, I. Total Factor Productivity Estimation: A Practical Review, *Journal of Economic Studies*, 2012, 26, 98-128.

Language

English

Organization and time

The course takes one week. It is held at University of Natural Resources and Life Sciences in Vienna. For further information contact Giannis Karagiannis (karagian@uom.gr).

In order to take part at this module held at BOKU University in Vienna it is necessary to register at BOKU University, Vienna (unless you registered as student at BOKU anyway) via <http://www.boku.ac.at/zid/themen/teach-learn/studium-meldung-weitermeldung-abschluss/voranmeldung/?&L=1> . By registering at BOKU you will become an “incoming student” for one term at BOKU, you will be insured, you will be able to use facilities such as the internet and the library at BOKU and you will get an official BOKU University certificate. The costs of your registration are paid for by BOKU.