

ECN 4xx: Efficiency and productivity

Time: Monday August 8, 2011 – Friday August 19, 2011 (lectures in August block semester).

Place: Norwegian University of Life Sciences, Ås, Norway.

Credits: 5 ECTS

Overview: This course focuses on the theoretical and empirical issues of measurement of productive performance. The basic starting point is axiomatic production theory and duality, which will be reviewed at the start of the course. Next, we develop basic performance measures that satisfy reasonable index number properties, and are easily estimated in the framework of activity analysis.

Students are required to design a research project using (or extending) the methods developed in the class. Typically, the project would be an empirical analysis; students will be instructed in the use of OnFront (a software which is designed to implement the performance measures covered in class). The project is started while lectures take place, and completed within three weeks after lectures end.

The course is designed for graduate students in economics, finance, business, management, industrial organization, or any other discipline where performance measurement is important.

1 Desired prerequisites

Graduate course in microeconomics with an emphasis on production, mathematics for economists or similar at the MSc level or higher.

2 Texts

Färe, R. & S. Grosskopf (2004): *New Directions: Efficiency and Productivity*. Kluwer Academic Publishers. Boston/London/Dordrecht.

Färe, R. & S. Grosskopf (1997): *Intertemporal Production Frontiers: With Dynamic DEA*. Kluwer Academic Publishers. Boston/London/Dordrecht (selected chapters).

Selected journal articles.

3 Topics outline

1. Axiomatic Production Theory (Appendix, *New Directions*)
2. Efficiency Indicators and Indexes (Essay One, *New Directions*)
3. Environmental Performance (Essay Two, *New Directions*)
4. Issues in Aggregation (Essay Three, *New Directions*)
5. Productivity (Chapter 3, *Dynamic DEA*)
6. Network and Dynamic Models (Chapters 2,6, *Dynamic DEA*)

4 Staff

Lecturers: Rolf Färe and Shawna Grosskopf (Oregon State University).

Course contact person: Eirik Romstad (Norwegian University of Life Sciences, eirik.romstad@umb.no)