

The IER Seminar in Empirical Economics

We would like to invite you all for the fifth IER seminar series in empirical economics that will be held at the *library of the Institute of Economics at Šancová 56, Bratislava on February 22nd, 2011 at 14:00*. The speaker will be

Univ. Prof Dr. Mikuláš Luptáčik

on

DEA Models in Environmental Economics

Please, confirm your possible participation by February 21st, 2011 to Soňa Slobodníková at sona.slobodnikova@savba.sk.

Short abstract is attached to the document.

We are very much looking forward to see you all at the seminar.

Kind regards

Marek Radvanský and Menbere Workie Tiruneh

DEA Models in Environmental Economics

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Key words: Eco-efficiency, emission trading system, regulatory impact, total factor productivity; Malmquist-Index.

The joint production of goods (desirable outputs) and undesirable outputs, such as pollutants causes difficulties in measuring the overall performance of the firm and of the national economy. The new concept in the current state of the public discussion on economic and environmental policy is the concept of eco-efficiency. There is an urgent need for eco-efficient solutions such that goods and services can be produced with less energy and resources and with less waste and emission.

The main problem for measuring the eco-efficiency and in developing the eco-efficiency indicators is the lack of evaluations like market prices for the undesirable outputs. Because efficiency indicators obtained by data envelopment analysis (DEA) are independent of the units in which the inputs and the outputs are measured, DEA can provide an appropriate methodological approach for developing the eco-efficiency indicators.

In the first part of the paper extensions of the basic DEA model which can be used for the estimation of eco-efficiency are presented.

In the second part the eco-efficiency concept will be used as a new principle for the allowance allocation mechanism in the emission trading system. Instead of the so-called "grandfathering" principle based on the previous emission data, the initial allocation of emission certificates to each plant is based on its eco-efficiency score, indicating the potential for the reductions of the emissions.

The problem of external effects in environmental economics and the goal of the improving environmental quality requires to adopt some regulatory constraints. In the current environmental policy the regulation of intensities and productivities by imposing a fixed amount of emission permits per unit of output or input are used. What is the impact of such regulatory constraints for the firm's eco-efficiency?

The last part of the paper deals with the analysis of changes in Total Factor Productivity (TFP) using the Malmquist-Index and taking pollution into account. TFP change can be driven by a change in basic input (like capital and labour) on the one hand and by a change in pollution (e.g. Green house gases) on the other. For this purpose a eco-Malmquist-Index is proposed and then applied to 14 member states of the EU for empirical illustration

The IER Seminar in Empirical Economics

The Institute of Economic Research of the Slovak Academy of Sciences (IER SAS) is intending to launch a regular monthly seminar in empirical economics to be held at the beginning of each month starting from June 2010. Despite the fact that IER is the largest research institute in Slovakia in the field of Economics, regular seminars with emphasis on methodological issues have been missing for years. Therefore, we believe this is time to reconfigure the status quo and follow the global trend.

Objective

The seminar should accomplish a number of significant issues. First, it will serve as a bridge between IER and other Slovak and international research institutions in terms of creating networks. Second, it serves as a forum to disseminate both theoretical models and empirical strategies so that IER employees can learn from a wide-range of issues and personalities.

Topics

All the papers to be presented should be economic modeling, econometrics or other forms of empirical research and should be supplemented with policy implications. A wide range of topics can be presented, which should include the following:

- Labor market,
- Economic development
- Economic growth
- International trade
- Monetary Economics
- Public Finance / Economics
- International Finance
- Globalization
- Energy and Environment
- Operations research
- Developing Countries
- Microeconomic issues
- Optimization Methods
- Regional economics

Language

The language of the seminar will be **English**. This should help to increase IER employees to improve their language command and skills of presentation in the most dominant research and business language in the world, i.e. English.

Organizational issues

The seminar will be co-chaired by Marek Radvanský and Menbere Workie.

Potential speakers should send their topics and abstracts to the chairs at least three weeks earlier than the date of the seminar and their PPT presentations at least two days prior to the date of the presentation. The abstracts will be uploaded on the IER website and disseminated to a wider public via e-mail. With the permission of the author, selected and modified papers from the presentations maybe recommended for publication in the Journal of Economics of IER. However, this should be more of an exception than a rule.