KATHOLIEKE UNIVERSITEIT LEUVEN

Statistics and Econometrics Seminar

Joint organization by
ORSTAT, Faculty of Business and Economics and the Statistics Research Group,
Faculty of Science
Leuven Statistics Research Center

Dr. Torben Schubert

Fraunhofer Institute for Systems and Innovation Research, Germany

"Testing restrictions in non-parametric frontier models: theory and empirical application"

Thursday, April 28, 2011
12.00–13.00h

Location: Room HOG 03.101, Naamsestraat 69, Leuven.
Supporting research project: GOA-project 2007/04

Abstract. Since Solow (Q J Econ 70:6594, 1956) the economic literature has widely accepted innovation and technological progress as the central drivers of long-term economic growth. From the microeconomic perspective, this has led to the idea that the growth effects on the macroeconomic level should be reflected in greater competitiveness of the firms. Although innovation effort does not always translate into greater competitiveness, it is recognized that innovation, is in an appropriate sense, unique and differs from other inputs like labor or capital. Nonetheless, often this uniqueness is left unspecified. We analyze two arguments rendering innovation special, the first related to partly non-discretionary innovation input levels and the second to the induced increase in the firms competitiveness on the global market. Methodologically, the analysis is based on restriction tests in non-parametric frontier models, where we use and extend tests proposed by Simar and Wilson (Commun Stat Simul Comput 26(1):159184, 2001; Inference by subsampling in non-parametric frontier models, (manuscript), 2009). The empirical data is taken from the German Community Innovation Survey 2007 (CIS 2007), where we focus on mechanical engineering firms. Our results are consistent with the explanation of the firms inability to freely choose the level of innovation inputs. However, we do not find significant evidence that increased innovation activities correspond to an increase in the ability to serve the global market.