[AGST INTERNATIONAL COLLABORATIVE COURSE]

生物資源経済学特別講義 VIA （前期集中）
Special Lecture on Natural Resources Economics VIA (Intensive)

Productivity and Efficiency Measurement

Prof. Subal C. Kumbhakar
(State University of New York at Binghamton)

and

Dr. Mohammad Abdul Malek
(University of Tsukuba)

Conventional neoclassical paradigm assumes that all firms operate rationally and efficiently. This is, however, not the case in reality. Firms, no matter what type of business they are involved often fail to operate with their full potential. The course challenges the neoclassical assumption of full efficiency and presents concepts, models and tools needed to analyze and quantify the levels of inefficiency and productivity at a point in time and their movement over time for each firm.

Presence of inefficiency results in lower output, higher cost, lower profit. Thus, it is important to know the extent of inefficiency and how it affects output, cost, revenue, profit, etc. Also the factors that might affect these inefficiencies.

This course uses an econometric approach (known as stochastic frontier approach) to identify and estimate the magnitude and possible sources of inefficiency using both cross-sectional and panel data. The focus will be mostly on technical inefficiency and its determinants.

The course also examines the impact of inefficiency on productivity growth (TFP) and profitability. We also address issues related to undesirable output and environmental efficiency. Finally, we show Stata software can be used to estimate inefficiency using a variety of models.

Prof. Subal C. Kumbhakar

Distinguished Professor of Economics
Department of Economics
State University of New York at Binghamton
His main areas of research are Econometrics, Applied Microeconometrics, Measurement of Efficiency and Productivity.

Dr. Mohammad Abdul Malek

Associate Professor
Faculty of Humanities and Social Sciences
University of Tsukuba
His research fields are Economic Policy, Agricultural Science in Rural Society and Development, Area Studies.

➤ **This course is designed to be worth 1 credit.**
➤ **Registration for academic credit:**
Students at GSA are required to register on **KULASIS** according to the following schedule:
- **Timetable creation: April 2-16**
- **Registration: April 17-20**
- **Correction: April 23-24**
- **Confirmation: April 28 (5 pm)**

JULY 2020

[COURSE SCHEDULE]

	8:45-10:15	10:30-12:00	13:00-14:30	14:45-16:15
July 4				①
July 5	②	③		④
July 6		⑤		
July 7	⑥	⑦	⑧	
July 8	⑨	Exam		

⬜ : Dr. Malek
⬜ : Prof. Kumbhakar

[VENUE]
July 4-7: W222 (Computer Lab)
July 8:   W402

[COURSE CONTENTS]

1. **Lab setup with Stata**
2. **Production function, its properties, some specific production functions, etc.**
3. **Estimating firm-specific inefficiency**
4. **Lab session: (i) Basics of Stata (ii) Estimation/Inference in Cross-Sectional SF models**
5. **Lab session: Estimation of inefficiency with determinants**
6. **Introduce determinants of inefficiency**
7. **Panel Data Methods**
8. **Panel Data Methods (advanced) &Stata Lab session: Estimation of panel SF models**
9. **TFP decomposition with inefficiency, etc.**
10. **Exam (Verbal one-to-one question answer session)**

For more details, visit our website:

http://www.reseco.kais.kyoto-u.ac.jp/en/news/20200330_1730/

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