

# Session 4

## **Establishing Benchmark for Global Innovation Ecosystem**

**— What is the measure for “Outcome  
of Innovation” and How to evaluate  
“Effect of the Policy Instruments”? —**

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# Outline

- Objective
  - To establish benchmark for GIES in scientific measures on “Outcome of Innovation”
  - To summarize our knowledge on the evaluation for “effects of the policy instruments”
- Contents
  - What is the measure to evaluate the productivity growth as well as the creation of the social value? (Prof. Ohashi)
  - What is the “New Economy”? (Prof. Jorgenson)
  - How to measure “intangible assets”? (Dr. Pilat and Prof. Odagiri)

# Measuring Novelty of Innovative Outcomes

## (Prof. Ohashi)

- We need to assess the extent to which QOL or social welfare is improved by outcomes of innovation.
- To measure welfare, we require information on market demand and assumption of modeling.
  - More attention in market transaction data both from consumers and firms viewpoints
  - Needs for checks of robustness and specification regarding model

# What is “New Economy”?

(Prof. Jorgenson)

- Since 1995, IT capital services occupied half of capital services in the U.S.
- IT-producing industries highly contributed to U.S. economy growth in the early 90's. IT-using and Non-IT industries also enormously contributed from 2000 to 2005.
- International comparison for productivity requires harmonizing data such as price, software and R&D.

# OECD Work on Measuring Innovation and Intangible Assets

## (Dr. Pilat)

- OECD Frascati and Oslo Manuals provide guidance to measure expenditure R&D and Innovation, respectively.
- R&D will be treated as investment in the revised SNA, instead of as current expenditure.
- Measurement of software and R&D still remains several problems
  - Own-account software, International trade, price index, service lives of assets,...
- Some issues on measurement of intangible assets will not be addressed by the SNA.
  - Non- technological innovation
  - Other intangible factors except for software and R&D (organizational change, human capital, intellectual property)
  - Firm dynamics (firm exit, entry and growth)

# Thoughts on “Establishing Benchmark for Global Innovation Ecosystem” (Prof. Odagiri)

- Many studies have been made to measure the impact of commercial R&D by the production function approach and the market value approach.
- However, we cannot sufficiently capture the contributions of scientific research
  - Both incorporating academic R&D expenses in the mentioned above approaches and science linkage indexes can capture the contribution in a limited way.
  - Long lags and big uncertainties are existing.

# Resolution

- We recommend the establishment of international network to set standards of statistical measure for intangible assets and innovation, which is comparable internationally.
- Also, we suggest the formulation of cooperative framework with UN and OECD and network among Asian countries with the participation of economists and science-technology researchers.
- The joint research project initiated by EUROSTAT has already started among developed countries. Our objective is to construct the Asian-version project.