NISTEP's Japanese National Innovation Survey 2012

Kyoji FUKAO

Hitotsubashi Univ., National Institute of Science and Technology Policy (NISTEP), and Research Institute of Economy, Trade and Industry (RIETI)

Yutaka YONETANI

National Institute of Science and Technology Policy (NISTEP)

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Agenda

- 1. Oslo standard innovation surveys
- 2. Japanese National Innovation Survey (J-NIS)
- 3. Details about J-NIS 2012
- 4. Our micro-data project
- 5. Background of intangible investment statistics
- 6. How to incorporate questionnaire items on intangible investment into CIS 2010 based questionnaire
- 7. Questionnaire items on intangible investment and innovation expenditure
- 8. Measuring CHS overall intangible investment
- 9. Unresolved issues



Note: CHS is abbreviation of Corrado, Hulten & Sichel.

Oslo standard innovation surveys

- Oslo standard innovation surveys used in about 50 countries
 - Oslo Manual (OECD guidelines for measuring innovation) makes it possible to provide policy makers with internationally comparable statistics on innovation.
 - Innovation is defined as the implementation of a new or significantly improved product, or process, a new marketing method, or a organizational method.

(Ex.) Questionnaire items on product innovation

2. Product (good or service) innovation A product innovation is the market introduction of a **new** or **significantly** improved good or service with respect to its capabilities, user friendliness, components or sub-systems. Product innovations (new or improved) must be new to your enterprise, but they do not need to be new to ۲ your market. Product innovations could have been originally developed by your enterprise or by other enterprises. • 2.1 During the three years 2006 to 2008, did your enterprise introduce: Yes No New or significantly improved goods. (Exclude the simple resale of new goods purchased from other enterprises and changes of a solely aesthetic nature.) New or significantly improved services.



Oslo standard innovation surveys (ctd)

- Statistics collected by OECD (Innovation Microdata Project; Science, Technology and Industry Scoreboard)
- "EU Community Innovation Survey (CIS) conducted every 2 years
 - Well-developed system with regulation, harmonized survey questionnaire, updating methodology (metadata), database
- U.S. Business Research & Development and Innovation Survey (BRDIS) conducted every year



Japanese National Innovation Survey (J-NIS)							
	J-NIS 2003	J-NIS 2009	J-NIS 2012				
OECD manual	Oslo Manual 2	Oslo Manual 3	Oslo Manual 3				
Corresponding CIS	CIS 3 (2000/2001)	CIS 2008	CIS 2010				
Industries covered	Agriculture, mining, manufacturing, some service industries	J-NIS 2003 + construction, more service industries	J-NIS 2009 + more service industries				
Sample size	43,174 firms	15,137 firms	About 25,000 firms				
Response rate	21.4%	30.3%	—				
Innovative firms %	21.6%	30.4%	—				
NISTEP publication	NISTEP RM 110	NISTEP REPORT 144	—				
International comparison	OECD: Innovation in Firms	(NISTEP DP 68)	—				
Unique topics in Japan	Effects of patents & their application	Technology transactions, R&D management, market structure	Intangible investment				

Details about J-NIS 2012

- Two themes of J-NIS 2012
 - 1. <u>Internationally comparable innovation statistics</u> based on Oslo Manual and CIS 2010 and its methodology (metadata)
 - 2. <u>Data on intangible investment</u> for OECD New Sources of Growth project and our micro-data analysis
- About 25,000 sample firms
 - Industries covered
 - All industries except education, learning support; medical, health care and welfare; cooperative associations; political, business and cultural organizations; religion; government, etc.
 - Scale of firms
 - Randomly drawn firms with 10 or more employees
 - > All firms with 1,000 or more employees



Our micro-data project



Background of intangible investment statistics

- OECD New Sources of Growth Project
 - Project requires data on intangible investment to examine new sources of productivity growth.
 - OECD colleagues working on intangible investment surveys have established an informal network for the exchange of information and peer review of questionnaires.
- In Japan, despite the growing need for micro-data on firmsq intangible investment (as highlighted in the 2011 *Economic White Paper*), such data are extremely limited.



Background of intangible investment statistics (ctd)

- Academic studies (e.g., CHS 2005) group the items commonly thought to represent private business spending on intangibles into three broad categories: computerized information, innovative property, economic competencies.
- Some EU countries are trying to collect data on intangible investment:
 - ♦ UK: ONS in 2009 & near future
 - ◆ Italy: Istat & Isfol pilot in 2011 & full scale survey in 2012
 - Germany: ZEW (working for German CIS) proposed a set of revised items on intangible investment in the CIS questionnaire



How to incorporate questionnaire items on intangible investment into CIS 2010 based questionnaire

Basically, we use a translated version of the CIS 2010 harmonized survey questionnaire except for Section 5, where we will revise items measuring firmsqintangible investment.

- 1. General information about the enterprise
- 2. Product (good or service) innovation
- 3. Process innovation
- 4. Ongoing or abandoned innovation activities for process & product innovation

Innovation activities & expenditures for process & product innovation

Similar to the ZEW proposal, we revise this section to measure intangible investment.

- 6. Sources of information & co-operation for product & process innovation
- 7. Objectives of product & process innovation
- 8. Factors hampering product & process innovation activities
- 9. Organizational innovation
- 10. Marketing innovation
- 11. Creativity & skills
- 12. Basic economic information on enterprise



Questionnaire items on intangible investment and innovation expenditure

CHS 2005		CIS 2010	UK ONS survey	ZEW proposal	J-NIS 2012
Computerized information	Computerized software	Software for product/process	0	0	1
	Computerized databases	innovation			
Innovative property	Scientific/non-scientific R&D	R&D	0	0	2
	Mineral exploration	_	_	_	3
	Own copyright & licenses	_	_	_	4
	Other product development & design	Design for product/process innovation	0	0	(%)
Economic competencies	Brand equity	Marketing for product/process innovation	0	0	(%)
	Firms-specific human capital	Training for product/process innovation	O (Training)	O (Training)	⑦(※)
	Organizational structure	_	0	—	(*)
CHS framework intangible assets		External knowledge for product/process innovation	-	0	9
		Machinery & equipment for product/process innovation	-	0	10
		Others for product/process innovation	-	0	1



(※) We need expenditure data not only for intangible investment overall (to contribute to the New Sources of Growth project, etc.), but also for product/process innovation only (to compare our results with innovation surveys abroad).

Measuring CHS overall intangible investment

- Training ⑦
 - Annual expenditure for OJT
 - Annual expenditure for Off-JT
 - Ratio of expenditure for firm-specific skills to the above whole expenditure
- Other intangible investment: (1) to (6), (8)
 - Annual internal expenditure: staff & associated costs
 - Annual external expenditure
 - . For R&D ① expenditure, we follow the definition used in the R&D census.
- ["] Life length/depreciation (year & month) for all intangibles (1) to (1) (expected span for return)

Unresolved issues

- We have to elaborate our whole questionnaire and methodology.
 - Carry out cognitive testing with some firms
 - Set up an advisory board with specialists on innovation & intangible assets
- We have to elaborate questionnaire items on innovation expenditure, including intangible investment.
 - Use a clear and exclusive definition of each component of intangible assets to satisfy SNA, Japanese accounting and reporting standards
 - ◆ Decide whether to take disposal of intangible assets into account
- We have to raise our response rate.
 - Use a respondent-friendly design in the questionnaire similar to the one by the US BRDIS



◆Increase the number of reminders