KNOWINNO - Making the most of knowledge
Innovation in services: the role of R&D and R&D policy (INNOSERV)
Sectoral measures of R&D and service-based R&D

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Overview

• Main objectives and approach
• BERD surveys and methodological challenges
• Sectoral measurement of business R&D
• Analytical work
• Next steps
Main objectives and approach

• Provide new evidence on prevalence and nature of R&D in services and link to innovation
• Improve current definitions and measurement of R&D (and innovation) in services
• Analysis of business R&D data from OECD databases + comparison with other sources
• NESTI review of BERD surveys → metadata collection + R&D Sources & Methods database
Definitions and scope

• Elements from *Frascati* definition which may prove challenging when applied to services
  – Treatment of social sciences and humanities (SSH) → generally included in business R&D surveys, but some exceptions (CAN, NZL, NLD)
  – Some borderline cases may be problematic (e.g. software R&D)
  – Link with other definitions: company financial reporting (expense and capital), R&D tax credits
General features of BERD surveys

- Generally designed as census of known/suspected performers (some exclusions) + sometimes sampling.
- Performers identified through various methods: business registers, other surveys (e.g. innovation, FATS), administrative data (e.g. R&D tax credits or other public support), previous replies, random sampling, etc.
- Generally annual surveys, compulsory in some countries.
- Some countries integrate with innovation surveys (implications for coverage of services).
- Use of short/long forms (small firms/performers).
- Main variables: intramural expenditure and personnel. Extramural R&D often not in scope.
Measurement challenges

- Increasing complexity in how firms organise R&D activities: internationalisation, outsourcing and use of on-site consultants, ‘servitization’

- Areas where national practices may differ and which may require further clarification: intra/extramural, performance vs. expensing, treatment of consultants, allocation by industry
OECD Research and Development Statistics database
www.oecd.org/sti/rds
Country submissions to OECD/ESTAT R&D data collection
Data on R&D expenditures, R&D personnel and GBAORD (government budgets)
Includes data on business R&D by industry and type of costs or source of funds
From 1981 onward; ISIC rev. 3
ISIC Rev. 4 data received for 75% of the countries (not yet published).

For more information on methodological aspects, see the Sources and Methods database:
• OECD ANalytical Business Enterprise R&D database (expenditure by industry).  
  www.oecd.org/sti/anberd
• Currently: 37 countries x 60 industries, data cover 1987-2009/10, ISIC Rev.3 (moving to 4)
• Uses RDS + national sources + estimations
• Estimations: missing years/industries
• Reclassify R&D by product field when possible (or industry served for R&D services industry)
• Linked to STAN (can calculate R&D intensities)
Share of services in business R&D, 1998 and 2008

• Significant differences in country practices
• *Main activity* data provided by most countries, additional *product field* (PF) table in few cases (*e.g.* BEL, CZE, UKM) and PF data only in rare cases (*e.g.* FRA)
• For large/multi-activity firms, R&D often further broken down
• Different treatment of firms providing R&D services (ISIC 73), sometimes depending on type of unit (independent/part of group) and industry served
Sectoral R&D by source of funds

OECD weighted average

Source: OECD, RDS database
Sectoral R&D by source of funds
By country, for total manufacturing and total services

Source: OECD, RDS database
Sectoral R&D by type of costs

OECD weighted average

Source: OECD, RDS database
Sectoral R&D by type of costs

By country, for total manufacturing and total services

Source: OECD, RDS database
R&D intensity adjusted for industrial structure

Decomposition of R&D intensity changes

Basis points, 1995-2009 (or closest year available) yearly average

Source: OECD calculations based on the OECD STAN and ANBERD databases
Next steps

• Refine analysis, look in more detail at different service sectors and aggregates (e.g. KIS/LKIS)
• Extend analytical work: e.g. sectoral R&D intensities
• Continue exploiting information from BERD survey metadata questionnaire
• Test comparisons with other sources (e.g. ORBIS, Industrial R&D Scoreboard)