



European
Research Area

EUROPEAN POLICY BRIEF

SPINTAN – Policy Brief No. 16

SPINTAN
smartpublicintangibles

A proposal for disentangling publicly funded R&D (GBAORD) by industry*

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SUMMARY

Objectives of the research

This research develops a methodology to disentangle public R&D expenditure (GBARD) by NACE industries and to identify the part devoted to ICT assets. The methodology is applied to the European Union and the Member States since 2006. The database comprises 37 NACE Rev. 2 industries.

Scientific approach / methodology

Our methodology is based on the definition of a NACE-NABS correspondence and the construction of proper weights to assign GBARD by NABS into each NACE industry. The weights are based on the assumption that R&D intensity in each industry is proportional to the labour costs of highly educated employees. The part of R&D expenditure devoted to ICT assets by industry is assumed to be proportional to the share of labour costs of employees with higher education performing ICT occupations.

New knowledge and/or European added value

The methodology allows the measurement of which part of public sector transfers and subsidies finance R&D investment in each industry, information not available up to this moment. The Digital Scoreboard of the European Commission only includes information of total public funding of ICT R&D by countries, and with our methodology it will be available also by industries.

Key messages for policy-makers, businesses, trade unions and civil society actors

Results show that R&D transfers are concentrated by industries, as only 5 industries account for 77% of total GBARD, particular in Education and the R&D sector. As expected, the ICT sector concentrates the higher intensity of public funding in ICTs. There are considerable differences across countries in term of the industry structure of GBARD and of ICT GBARD.

* This Policy Brief is based on the SPINTAN Working Paper No. 23: Mas, M., E. Benages, J. Fernández de Guevara y L. Hernández (2016): "A proposal for disentangling publicly funded R&D (GBAORD) by industry", available on the SPINTAN website: <http://www.spintan.net/c/working-papers/>.

Objectives of the research

This research develops a methodology to disentangle public R&D expenditure (GBARD) by NACE industries and to identify the part devoted to ICT assets within each sector. The methodology is applied to the European Union and its Member States since 2006. The database comprises 37 NACE Rev. 2 industries.

Scientific approach / methodology

Our methodology consists of the following steps. First, we propose a correspondence between NACE classification (Rev 1.1 and Rev 2) and NABS-2007 chapters at three-digits level. Once the correspondence is defined, the second step consists of constructing weights to assign official GBARD by NABS to each NACE industry. The weights are based on the assumption that R&D intensity in each industry is related to the share of labour costs of employees with higher education in total labour costs. Finally, to compute the part of R&D expenditure devoted to ICT assets in each NACE industry, it is assumed that the ratio of R&D investment in ICT assets is equal to the share of labour costs of employees with higher education performing ICT occupations over total labour costs.

New knowledge and European added value

One of the SPINTAN goals is to capitalise R&D government expenditures. A key issue here is to measure which part of public sector transfers (both of current costs and capital expenditures) and subsidies finance R&D investment. Hence, to properly measure the contribution of public funding to R&D it is essential to have accurate information by industries on public sector transfers used to acquire intangible assets. Up to now, there is information available only for socioeconomic objectives (NABS chapters) but not by industries.

This issue is also of relevance in the context of the Single Digital Market strategy of the European Commission. The Digital Scoreboard of the European Commission only includes information of total public funding of ICT R&D by countries, and with our methodology it will be available also by industries.

Key messages for policy-makers, businesses, trade unions and civil society actors

Results show that R&D transfers are concentrated in a small number of industries. Only 5 industries account for 77% of total GBARD (Education; Scientific Research and development; Health; Public Administration; and Legal, accounting, technical testing and analysis, architectural and engineering activities). As expected, ICT GBARD concentrates in the ICT producing industries, although other industries are also intensive (such as magnetic and optical media, or publishing, audiovisual and broadcasting). There are considerable differences across countries in term of the industry structure of GBARD and of ICT GBARD.

SPINTAN – Smart public intangibles

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Website	www.spintan.net
Further reading	
Related websites	
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