

# **Science, Technology and Patents Statistics**

# Science, Technology and Patents Statistics

## Analytical Business Enterprise Research and Development

### Purpose

To provide a consistent and comparable data set across countries and over time on industrial R&D expenditures broken down by industry.

### Objectives and outputs

Through the use of established estimation techniques, the OECD has created a database for 19 of the largest R&D performing countries. The ANBERD (Analytical Business Enterprise Research and Development) database was developed to provide a consistent data set that overcomes the problems of international comparability and breaks in the time series of the official business enterprise R&D by industry provided to the OECD by its member countries through the OECD's R&D survey.

### Databases

Analytical Business Enterprise Research and Development (ANBERD)/ Analytical Researchers, Scientists and Engineers (ANRSE)

### Main Developments for 2008

#### General aspects:

Continued efforts will be made to improve the quality of the data, in particular comparability issues related to the classification of firms by industry. These issues will be addressed based on data collected through the new joint OECD/ESTAT R&D Questionnaire and a review of ANBERD estimation procedures.

# Science, Technology and Patents Statistics

## Biotechnology

### Purpose

To establish international standards for the collection of biotechnology data across OECD member countries.

### Objectives and outputs

Under the auspices of the National Experts of Science and Technology Indicators (NESTI) group, five Ad hoc Biotechnology Statistics meetings have been held to date. These meetings have achieved: an internationally agreed upon definition of biotechnology, a model survey for the collection of biotechnology data in member countries, and an inventory of biotechnology data collected in member and selected non-member countries.

### Non-member countries involved in the activity:

China, India, Indonesia, Israel, Russian Federation, South Africa

### Main Developments for 2008

#### General aspects:

Start data collection exercise for a 2008/2009 biotechnology statistics compendium.

NESTI approved a proposal for a 2008 meeting of Ad Hoc Meeting on Biotechnology Statistics. The meeting will be held in May 2008 to review/update/extend the framework for biotechnology statistics, released in 2005.

# Science, Technology and Patents Statistics

## Main Science and Technology Indicators

### Purpose

To publish biannually the most commonly used indicators on science and technology on an internationally comparable basis. The database and publication are regularly updated with 76 (paper publication) to 138 (electronic publication) data series presenting resources devoted to R&D and measures of output and the impact of S&T activities.

### Objectives and outputs

This biannual publication provides a set of indicators that reflect the level and structure of the efforts undertaken by OECD member countries and 9 non-member economies in the field of science and technology. These data include final and provisional results as well as forecasts established by government authorities. The indicators cover the resources devoted to research and development, patent families, technology balance of payments and international trade in highly R&D intensive industries. Also presented are the underlying economic series used to calculate these indicators. Series are presented for a reference year and the last six years for which data are available (paper publication) and beginning 1981 (electronic editions).

### Non-member countries involved in the activity:

Argentina, China, Chinese Taipei, Israel, Romania, Russian Federation, Singapore, Slovenia, South Africa

### Databases

Main Science and Technology Indicators

Main Science and Technology Indicators (MSTI)

### Main Developments for 2008

#### General aspects:

No major changes.

# Science, Technology and Patents Statistics

## Patents

### Purpose

To develop an international statistical infrastructure for patents (including databases and methodologies), which will provide the conditions for improving the quality and international comparability of patent indicators. Development of policy-relevant indicators from this work. Serves as a basis for policy relevant studies carried out within and outside OECD.

### Objectives and outputs

To develop patent databases suitable for calculating indicators for statistical and S&T policy purposes, covering patent filings to national and regional patent offices across the world. Currently, the following patent statistics are collected and processed on a regular basis: indicators based on EPO (European Patent Office) patent; indicators based on USPTO (US Patent and Trademark Office) patents; and "triadic" patent families indicators.

Develop new techniques for nowcasting patent indicators.

Patent statistics are published in various publications: Main Science and Technology Indicators; OECD Science, Technology and Industry Scoreboard; OECD Science, Technology and Industry Outlook and a freely available annual Compendium of Patent Statistics.

The focus of the methodological work is to provide guidelines for compiling patent statistics and indicators, and to provide users with methodological information in a transparent manner. The following issues have been investigated: criteria for counting patent data; triadic patent families' definition; patent data for specific technology area; patent data by industry, patents by region and patent citations.

Regular workshops on patent statistics are jointly organised by OECD, EPO, WIPO and EuroStat.

### Main Developments for 2008

#### General aspects:

Updating the existing patent database; extending the data coverage (i.e. to include information from more national patent offices); methodological work on nowcasting triadic patent family data; further development of citations indicators, development of further analytical applications of patent data, development of further patent indicators (reflecting globalisation, nanotechnology, energy and environment related technologies); patents by industry. Patenting activity by (TL3) region.

The Manual on Patent Statistics is expected to be completed by end 2008 after review by group of experts and presentation of first draft to NESTI meeting in June 2008.

Patent based indicators and analyses expected to make contribution to OECD Innovation Strategy. Increased use by other directorates (e.g. ENV and GOV) expected in 2008.

First analyses using Trademark data also expected.

# Science, Technology and Patents Statistics

## Research and Development (R&D) Statistics

### Purpose

To provide internal and external users with statistics on R&D expenditures and personnel and to ensure, through appropriate methodological work, the international comparability of corresponding national statistics.

### Objectives and outputs

Management and/or development of internationally comparable statistics on resources devoted to R&D in member countries and in nine non-member economies based on the OECD international methodology for R&D survey, the "Frascati Manual". Diffusion of S&T statistics and corresponding metadata via the annual "R&D Statistics" and the biannual "Main S&T Indicators" publications and the on-line "R&D Sources and Methods database". The country coverage of OECD S&T databases and publications is being expanded to include comparable S&T indicators and statistics for non-member economies such as Argentina, China, Israel, Romania, Russia, Singapore, Slovenia, South Africa and Chinese Taipei.

### Non-member countries involved in the activity:

Argentina, China, Israel, Other, Romania, Russian Federation, Singapore, Slovenia, South Africa

### Databases

S&T Databases: GERD, DEFENSE-GERD, PERS, BERD, DIRDE, BEMP, PRDE, HERD, HEMP, OBJBUD, PE-INST-GE, HCPERS

### Main Developments for 2008

#### General aspects:

Data is now collected through a joint OECD/ESTAT Questionnaire

#### Data collection:

The questionnaire form (not the content) is being revised and improved as part of the migration of the database from a PC Express environment to StatWorks and OECD.Stat.

# Science, Technology and Patents Statistics

## Sources and Methods for Research and Development (R&D) Statistics

### Purpose

To meet demand for country-specific and item-specific methodology, this database relates principally to R&D as reported by the units performing the R&D in line with the standard methodology for R&D statistics recommended by OECD in the Proposed Standard Practice for Surveys of Research and Experimental Development - Frascati Manual (OECD).

### Objectives and outputs

The database provides detail on methods used in the member countries and nine non-member economies when compiling the R&D data reported to OECD in the framework of the International Survey of the Resources devoted to R&D by OECD countries, underlining both current and historical national specificities of the data stored in the OECD STI/EAS R&D database. The sources and methods are regularly updated as part of the International Survey of the Resources devoted to R&D by OECD countries. The Secretariat has made this database available on line either through the NESTI-NET:  
<http://webdomino1.oecd.org/COMNET/STI/NESTI-NET.nsf/Welcome?openframeset>, where delegates are able to consult.

Selected metadata are regularly published in "Research and Development Statistics" (annual electronic publication and paper edition every two years) as well as in "Main Science and Technology Indicators" (paper and electronic publication appearing twice yearly). This information was also used as input to the revision of the "Frascati Manual", the international standard methodology for the measurement of resources devoted to R&D.

### Non-member countries involved in the activity:

Argentina, China, Chinese Taipei, Israel, Romania, Russian Federation, Singapore, Slovenia, South Africa

### Databases

R&D\_SM database

### Main Developments for 2008

#### General aspects:

A revised metadata structure, coordinated with Eurostat, to be implemented in the course of 2008.