

Annex C: European Innovation Scoreboard 2008 – Definitions of indicators³⁵

Indicators	Numerator	Denominator	Reference year	Source
1.1.1 S&E and SSH graduates per 1000 population aged 20-29 (first stage of tertiary education)	Number of S&E (science and engineering) and SSH (social sciences and humanities) graduates at first stage of tertiary education (ISCED 5)	Population between 20 and 29 years	2006 (2005 for GR, TR; no data for LU)	Eurostat
1.1.2 S&E and SSH doctorate graduates per 1000 population aged 25-34 (second stage of tertiary education)	Number of S&E (science and engineering) and SSH (social sciences and humanities) graduates at second stage of tertiary education (ISCED 6)	Population between 25 and 34 years	2006 (2005 for GR, IT, IS; no data for LU)	Eurostat
1.1.3 Population with tertiary education per 100 population aged 25-64	Number of persons in age class with some form of post-secondary education (ISCED 5 and 6)	Population between 25 and 64 years	2007 (2006 for IS)	Eurostat
1.1.4 Participation in life-long learning per 100 population aged 25-64	Number of persons involved in life-long learning. Life-long learning is defined as participation in any type of education or training course during the four weeks prior to the survey	Population between 25 and 64 years	2007 (2006 for SE, UK, IS, CH)	Eurostat
1.1.5 Youth education attainment level	Number of young people aged 20-24 years having attained at least upper secondary education attainment level, i.e. with an education level ISCED 3a, 3b or 3c long minimum	Population between 20 and 24 years	2007 (2006 for IS, NO, CH)	Eurostat
1.2.1 Public R&D expenditures (% of GDP)	All R&D expenditures in the government sector (GOVERD) and the higher education sector (HERD). Both GOVERD and HERD according to the Frascati-manual definitions	Gross Domestic Product	2007 (2006 for PL, UK, TR, CH; 2005 for IT, IS)	Eurostat
1.2.2 Venture capital (% of GDP)	Venture capital investment is defined as private equity being raised for investment in companies. Management buyouts, management buyins, and venture purchase of quoted shares are excluded. VC includes Early stage (seed + start-up) and Expansion and replacement (expansion and replacement capital) capital	Gross Domestic product	2007 (2005 for SK; no data for BG, EE, CY, LV, LT, LU, HU, MT, SI, TR, IS) Two-year averages are used (cf. EIS 2008 Methodology Report)	EVCA / Eurostat
1.2.3 Private credit (relative to GDP)	Claims on the private sector by commercial banks and other financial institutions that accept transferable deposits such as demand deposits (line 22d of IMF International Financial Statistics)	Gross Domestic Product (line 99b of IMF International Financial Statistics)	2007 (2006 for RO, IS)	IMF
1.2.4 Broadband access by firms (% of firms)	Number of enterprises (excluding the financial sector) with 10 or more employees with broadband access	Total number of enterprises (excluding the financial sector) with 10 or more employees	2007 (2006 for IS; 2005 for CH)	Eurostat
2.1.1 Business R&D expenditures (% of GDP)	All R&D expenditures in the business sector (BERD), according to the Frascati-manual definitions	Gross Domestic Product	2007 (2006 for PL, UK, TR; 2005 for IS; 2004 for CH)	Eurostat

³⁵ A discussion of the choice of indicators and sources is provided in the 2008 EIS methodology report.

Indicators	Numerator	Denominator	Reference year	Source
2.1.2 IT expenditures (% of GDP)	Total expenditures on IT. IT expenditures capture hardware, software and other services. The data cover the total market, including expenditure of the public and private sector (enterprises, as well as those of individuals and households)	Gross Domestic Product	2006 (no data for CY, LU, MT, TR, IS)	EITO / Eurostat
2.1.3 Non-R&D innovation expenditures (% of turnover)	Sum of total innovation expenditure for enterprises, in national currency and current prices excluding intramural and extramural R&D expenditures	Total turnover for all enterprises	2006 (2005 for CH; 2004 for DE, GR, FR, IT; no data for LV, AT, FI, UK, IS)	Eurostat
2.2.1 SMEs innovating in-house (% of SMEs)	Sum of SMEs with in-house innovation activities. Innovative firms are defined as those firms which have introduced new products or processes either 1) in-house or 2) in combination with other firms	Total number of SMEs	2006 (2005 for CH; 2004 for DK, GR, FR, IT, SE, NO; no data for LV, LU, MT, SI, UK, IS)	Eurostat
2.2.2 Innovative SMEs collaborating with others (% of SMEs)	Sum of SMEs with innovation co-operation activities. Firms with co-operation activities are those that had any co-operation agreements on innovation activities with other enterprises or institutions in the three years of the survey period	Total number of SMEs	2006 (2005 for CH; 2004 for GR, FR, IS, NO)	Eurostat
2.2.3 Firm renewal (SMEs entries + exits) (% of SMEs)	Sum of the number of births and deaths of SMEs. Only SMEs with at least 5 employees and who are active in NACE classes C, D, E, G51, I, J and K are included	Total number of SMEs	2005 (2004 for CZ, IT, LU, HU, NL, PT, SK, FI, CH; 2003 for SI; 2002 for LT; 2001 for NO; no data for BE, BG, DK, DE, IE, GR, FR, CY, MT, AT, PL, TR, IS)	Eurostat
2.2.4 Public-private co-publications per million population	Number of public-private co-authored publications. "Public-private co-publications" are defined as all research-related papers (document types: 'research articles', 'research reviews', notes' and 'letters') published in the Web of Science database.	Total population	2006 Two-year averages are used (cf. EIS 2008 Methodology Report)	Thomson Reuters / CWTS
2.3.1 EPO patents per million population	Number of patents applied for at the European Patent Office (EPO), by year of filing. The national distribution of the patent applications is assigned according to the address of the inventor	Total population	2005	Eurostat
2.3.2 Community trademarks per million population	Number of new community trademarks. A trademark is a distinctive sign, identifying certain goods or services as those produced or provided by a specific person or enterprise	Total population	2007	OHIM / Eurostat
2.3.3 Community designs per million population	Number of new community designs. A registered Community design is an exclusive right for the outward appearance of a product or part of it, resulting from the features of, in particular, the lines, contours, colours, shape, texture and/or materials of the product itself and/or its ornamentation	Total population	2007	OHIM / Eurostat

Indicators	Numerator	Denominator	Reference year	Source
2.3.4 Technology Balance of Payments flows (% of GDP)	Royalty and license fees, receipts (Balance of Payments, current US\$) plus Royalty and license fees, payments (Balance of Payments, current US\$)	Gross Domestic Product (current US\$)	2006 (2005 for AT; 2004 for TR; 2003 for SK; no data for DK)	World Bank
3.1.1 SMEs introducing product or process innovations (% of SMEs)	Number of SMEs who introduced a new product or a new process to one of their markets	Total number of SMEs	2006 (2005 for CH; 2004 for GR, FR, MT, NO; no data for IS)	Eurostat
3.1.2 SMEs introducing marketing or organisational innovations (% of SMEs)	Number of SMEs who introduced a new marketing innovation and/or organisational innovation to one of their markets	Total number of SMEs	2006 (2004 for BE, GR, ES, FR, IT, SK, NO; no data for LV, SI, FI, SE, IS, CH)	Eurostat
3.1.3 Resource efficiency innovators, unweighted average of the following 2 indicators:				
Reduced labour costs (% of firms)	Number of innovating firms who replied that their product or process innovation had a highly important effect on reducing labour costs per unit of output	Total number of innovating firms	2006 (2004 for BE, DE, IE, GR, FR, IT, SI, IS, NO; no data for UK, CH)	Eurostat
Reduced use of materials and energy (% of firms)	Number of innovating firms who replied that their product or process innovation had a highly important effect on reducing materials and energy per unit of output	Total number of innovating firms	2006 (2004 for BE, DE, IE, GR, FR, IT, SI, SE, IS, NO; no data for UK, CH)	Eurostat
3.2.1 Employment in medium-high & high-tech manufacturing (% of workforce)	Number of employed persons in the medium-high and high-tech manufacturing sectors	Total workforce	2007 (2006 for HR, IS)	Eurostat
3.2.2 Employment in knowledge-intensive services (% of workforce)	Number of employed persons in the knowledge-intensive services sectors	Total workforce	2007 (2006 for HR, IS)	Eurostat
3.2.3 Medium and high-tech manufacturing exports (% of total exports)	Value of medium and high-tech exports	Value of total exports	2006 (2005 for TR)	Eurostat
3.2.4 Knowledge-intensive services exports (% of total services exports)	Exports of knowledge-intensive services are measured by the sum of credits in EBOPS (Extended Balance of Payments Services Classification) 207, 208, 211, 212, 218, 228, 229, 245, 253, 254, 260, 263, 272, 274, 278, 279, 280 and 284	Total services exports as measured by credits in EBOPS 200	2006 (2005 for IE, FI; no data for ES, FR, IT)	Eurostat
3.2.5 New-to-market sales (% of turnover)	Sum of total turnover of new or significantly improved products for all enterprises	Total turnover for all enterprises	2006 (2005 for CH; 2004 for GR, FR, SE, IS, NO)	Eurostat
3.2.6 New-to-firm sales (% of turnover)	Sum of total turnover of new or significantly improved products to the firm but not to the market for all enterprises	Total turnover for all enterprises	2006 (2005 for CH; 2004 for GR, FR, SE, IS, NO)	Eurostat