

International Audit of Research, Development and Innovation in the Czech Republic

First Interim Report

Annex 2: Data on Bibliometrics – September 14, 2010



evropský
sociální
fond v ČR



EVROPSKÁ UNIE



MINISTERSTVO ŠKOLSTVÍ,
MLÁDEŽE A TĚLOVÝCHOVY



OP Vzdělávání
pro konkurenceschopnost

INVESTICE DO ROZVOJE VZDĚLÁVÁNÍ

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Appendix A Field composition

Field	Journal Subject Category
AGRICULTURE AND FOOD SCIENCE	AGRICULTURAL ENGINEERING
	AGRICULTURAL EXPERIMENT STATION REPORTS
	AGRICULTURE, DAIRY & ANIMAL SCIENCE
	AGRICULTURE, MULTIDISCIPLINARY
	AGRONOMY
	FOOD SCIENCE & TECHNOLOGY
	NUTRITION & DIETETICS
	SOIL SCIENCE
ASTRONOMY AND ASTROPHYSICS	ASTRONOMY & ASTROPHYSICS
BASIC LIFE SCIENCES	BIOCHEMICAL RESEARCH METHODS
	BIOCHEMISTRY & MOLECULAR BIOLOGY
	BIOPHYSICS
	BIOTECHNOLOGY & APPLIED MICROBIOLOGY
	CELL & TISSUE ENGINEERING
	CELL BIOLOGY
	DEVELOPMENTAL BIOLOGY
	GENETICS & HEREDITY
	MICROBIOLOGY
	REPRODUCTIVE BIOLOGY
BASIC MEDICAL SCIENCES	CHEMISTRY, MEDICINAL
	ENGINEERING, BIOMEDICAL
	MATERIALS SCIENCE, BIOMATERIALS
	MEDICAL INFORMATICS
BIOLOGICAL SCIENCES	BEHAVIORAL SCIENCES
	BIOLOGY
	ENTOMOLOGY
	EVOLUTIONARY BIOLOGY
	FISHERIES
	HORTICULTURE
	MARINE & FRESHWATER BIOLOGY
	MATHEMATICAL & COMPUTATIONAL BIOLOGY

Field

Journal Subject Category

BIOMEDICAL SCIENCES	MYCOLOGY
	ORNITHOLOGY
	PLANT SCIENCES
	ZOOLOGY
	ANATOMY & MORPHOLOGY
	IMMUNOLOGY
	INTEGRATIVE & COMPLEMENTARY MEDICINE
	MEDICAL LABORATORY TECHNOLOGY
	MEDICINE, RESEARCH & EXPERIMENTAL
	NEUROIMAGING
	NEUROSCIENCES
	PHARMACOLOGY & PHARMACY
	PHYSIOLOGY
	RADIOLOGY, NUCLEAR MEDICINE & MEDICAL IMAGING
	TOXICOLOGY
	VIROLOGY
CHEMISTRY AND CHEMICAL ENGINEERING	CHEMISTRY, ANALYTICAL
CHEMISTRY AND CHEMICAL ENGINEERING (continued)	CHEMISTRY, APPLIED
	CHEMISTRY, INORGANIC & NUCLEAR
	CHEMISTRY, MULTIDISCIPLINARY
	CHEMISTRY, ORGANIC
	CHEMISTRY, PHYSICAL
	ELECTROCHEMISTRY
	ENGINEERING, CHEMICAL
	MATERIALS SCIENCE, PAPER & WOOD
	MATERIALS SCIENCE, TEXTILES
	POLYMER SCIENCE
	SPECTROSCOPY
	CONSTRUCTION & BUILDING TECHNOLOGY
	ENGINEERING, CIVIL
CIVIL ENGINEERING AND CONSTRUCTION	ALLERGY
CLINICAL MEDICINE	ANDROLOGY
	ANESTHESIOLOGY
	CARDIAC & CARDIOVASCULAR SYSTEMS
	CLINICAL NEUROLOGY
	CRITICAL CARE MEDICINE
	DENTISTRY, ORAL SURGERY & MEDICINE
	DERMATOLOGY

Field	Journal Subject Category
	EMERGENCY MEDICINE
	ENDOCRINOLOGY & METABOLISM
	GASTROENTEROLOGY & HEPATOLOGY
	HEMATOLOGY
	INFECTIOUS DISEASES
	MEDICINE, GENERAL & INTERNAL
	OBSTETRICS & GYNECOLOGY
	ONCOLOGY
	OPHTHALMOLOGY
	ORTHOPEDICS
	OTORHINOLARYNGOLOGY
	PARASITOLOGY
	PATHOLOGY
	PEDIATRICS
	PERIPHERAL VASCULAR DISEASE
	PSYCHIATRY
	PUBLIC, ENVIRONMENTAL & OCCUPATIONAL HEALTH
	RESPIRATORY SYSTEM
	RHEUMATOLOGY
	SURGERY
	TRANSPLANTATION
	TROPICAL MEDICINE
	UROLOGY & NEPHROLOGY
	VETERINARY SCIENCES
COMPUTER SCIENCES	COMPUTER SCIENCE, ARTIFICIAL INTELLIGENCE
	COMPUTER SCIENCE, CYBERNETICS
	COMPUTER SCIENCE, HARDWARE & ARCHITECTURE
	COMPUTER SCIENCE, INFORMATION SYSTEMS
	COMPUTER SCIENCE, INTERDISCIPLINARY APPLICATIONS
	COMPUTER SCIENCE, SOFTWARE ENGINEERING
CREATIVE ARTS, CULTURE AND MUSIC	COMPUTER SCIENCE, THEORY & METHODS
	ARCHITECTURE
	ART
	ASIAN STUDIES
	CLASSICS
	DANCE
	FILM, RADIO, TELEVISION
	FOLKLORE
	HUMANITIES, MULTIDISCIPLINARY

Field	Journal Subject Category
EARTH SCIENCES AND TECHNOLOGY	MUSIC
	THEATER
	ENGINEERING, GEOLOGICAL
	ENGINEERING, MARINE
	ENGINEERING, OCEAN
	GEOCHEMISTRY & GEOPHYSICS
	GEOGRAPHY, PHYSICAL
	GEOLOGY
	GEOSCIENCES, MULTIDISCIPLINARY
	IMAGING SCIENCE & PHOTOGRAPHIC TECHNOLOGY
	METEOROLOGY & ATMOSPHERIC SCIENCES
	MINERALOGY
	OCEANOGRAPHY
	PALEONTOLOGY
ECONOMICS AND BUSINESS	REMOTE SENSING
	AGRICULTURAL ECONOMICS & POLICY
	BUSINESS
	BUSINESS, FINANCE
	ECONOMICS
EDUCATIONAL SCIENCES	INDUSTRIAL RELATIONS & LABOR
	EDUCATION & EDUCATIONAL RESEARCH
	EDUCATION, SCIENTIFIC DISCIPLINES
	EDUCATION, SPECIAL
ELECTRICAL ENGINEERING AND TELECOMMUNICATION	PSYCHOLOGY, EDUCATIONAL
	AUTOMATION & CONTROL SYSTEMS
	ENGINEERING, ELECTRICAL & ELECTRONIC
	ROBOTICS
	TELECOMMUNICATIONS
	TRANSPORTATION
	TRANSPORTATION SCIENCE & TECHNOLOGY
ENERGY SCIENCE AND TECHNOLOGY	ENERGY & FUELS
	ENGINEERING, PETROLEUM
	MINING & MINERAL PROCESSING
	NUCLEAR SCIENCE & TECHNOLOGY
ENVIRONMENTAL SCIENCES AND TECHNOLOGY	BIODIVERSITY CONSERVATION
	ECOLOGY
	ENGINEERING, ENVIRONMENTAL
	ENVIRONMENTAL SCIENCES
	ENVIRONMENTAL STUDIES

Field	Journal Subject Category
	FORESTRY
	GEOGRAPHY
	LIMNOLOGY
ENVIRONMENTAL SCIENCES AND TECHNOLOGY (continued)	URBAN STUDIES
GENERAL AND INDUSTRIAL ENGINEERING	WATER RESOURCES
	ENGINEERING, INDUSTRIAL
	ENGINEERING, MANUFACTURING
	ENGINEERING, MULTIDISCIPLINARY
	ERGONOMICS
HEALTH SCIENCES	GERIATRICS & GERONTOLOGY
	GERONTOLOGY
	HEALTH CARE SCIENCES & SERVICES
	HEALTH POLICY & SERVICES
	NURSING
	REHABILITATION
	SOCIAL WORK
	SPORT SCIENCES
	SUBSTANCE ABUSE
HISTORY, PHILOSOPHY AND RELIGION	ARCHAEOLOGY
	ETHICS
	HISTORY
	HISTORY & PHILOSOPHY OF SCIENCE
	HISTORY OF SOCIAL SCIENCES
	MEDICAL ETHICS
	MEDIEVAL & RENAISSANCE STUDIES
	PHILOSOPHY
	RELIGION
INFORMATION AND COMMUNICATION SCIENCES	COMMUNICATION
	INFORMATION SCIENCE & LIBRARY SCIENCE
INSTRUMENTS AND INSTRUMENTATION	INSTRUMENTS & INSTRUMENTATION
	MICROSCOPY
LANGUAGE AND LINGUISTICS	LANGUAGE & LINGUISTICS
	LINGUISTICS
LAW AND CRIMINOLOGY	CRIMINOLOGY & PENOLOGY
	LAW
	MEDICINE, LEGAL
LITERATURE	LITERARY REVIEWS
	LITERARY THEORY & CRITICISM
	LITERATURE

Field	Journal Subject Category
MANAGEMENT AND PLANNING	LITERATURE, AFRICAN, AUSTRALIAN, CANADIAN
	LITERATURE, AMERICAN
	LITERATURE, BRITISH ISLES
	LITERATURE, GERMAN, DUTCH, SCANDINAVIAN
	LITERATURE, ROMANCE
	LITERATURE, SLAVIC
	POETRY
MANAGEMENT AND PLANNING	MANAGEMENT
	OPERATIONS RESEARCH & MANAGEMENT SCIENCE
	PLANNING & DEVELOPMENT
MATHEMATICS & STATISTICAL SCIENCES	MATHEMATICS
	MATHEMATICS, APPLIED
	MATHEMATICS, INTERDISCIPLINARY APPLICATIONS
	STATISTICS & PROBABILITY
MECHANICAL ENGINEERING AND AEROSPACE	ACOUSTICS
	ENGINEERING, AEROSPACE
	MECHANICS
MULTIDISCIPLINARY JOURNALS	MULTIDISCIPLINARY SCIENCES
PHYSICS AND MATERIALS SCIENCE	CRYSTALLOGRAPHY
	ENGINEERING, MECHANICAL
	MATERIALS SCIENCE, CERAMICS
	MATERIALS SCIENCE, CHARACTERIZATION & TESTING
	MATERIALS SCIENCE, COATINGS & FILMS
	MATERIALS SCIENCE, COMPOSITES
	MATERIALS SCIENCE, MULTIDISCIPLINARY
	METALLURGY & METALLURGICAL ENGINEERING
	NANOSCIENCE & NANOTECHNOLOGY
	OPTICS
	PHYSICS, APPLIED
	PHYSICS, ATOMIC, MOLECULAR & CHEMICAL
	PHYSICS, CONDENSED MATTER
	PHYSICS, FLUIDS & PLASMAS
	PHYSICS, MATHEMATICAL
	PHYSICS, MULTIDISCIPLINARY
	PHYSICS, NUCLEAR
	PHYSICS, PARTICLES & FIELDS
	THERMODYNAMICS
POLITICAL SCIENCE AND PUBLIC ADMINISTRATION	INTERNATIONAL RELATIONS
	POLITICAL SCIENCE
	PUBLIC ADMINISTRATION

Field	Journal Subject Category
PSYCHOLOGY	PSYCHOLOGY, APPLIED PSYCHOLOGY, BIOLOGICAL PSYCHOLOGY, CLINICAL PSYCHOLOGY, DEVELOPMENTAL PSYCHOLOGY, EXPERIMENTAL PSYCHOLOGY, MATHEMATICAL PSYCHOLOGY, MULTIDISCIPLINARY PSYCHOLOGY, PSYCHOANALYSIS PSYCHOLOGY, SOCIAL
SOCIAL AND BEHAVIORAL SCIENCES, INTERDISCIPLINARY	DEMOGRAPHY SOCIAL ISSUES SOCIAL SCIENCES, BIOMEDICAL SOCIAL SCIENCES, INTERDISCIPLINARY SOCIAL SCIENCES, MATHEMATICAL METHODS
SOCIOLOGY AND ANTHROPOLOGY	ANTHROPOLOGY AREA STUDIES ETHNIC STUDIES FAMILY STUDIES HOSPITALITY, LEISURE, SPORT & TOURISM SOCIOLOGY WOMEN'S STUDIES

Appendix B Basic Bibliometric Indicators

A standard set of basic indicators plays a central role in most of our bibliometric evaluation studies. The main focus here will be on three indicators, namely the number of publications (P), the citation per publication ratio (CPP), and comparison of this CPP with the worldwide average 'field citation score' (FCSm) in order to normalize the measured impact in a field-specific way. For a detailed description we refer to our publications given in the literature overview added to this report. In these publications we amply discuss the usefulness of bibliometric (citation-based) impact measurements as a 'proxy' for the assessment of scientific quality.

A first indicator gives the total number of papers published by the unit of analysis during the given period (P). We considered only normal articles, letters, notes, and reviews. Meeting abstracts, corrections and editorials are not included. In a few cases a paper is published in a journal for which no citation data are available, or in a journal that is not assigned to any Thomson Scientific journal subject category ('field'). These papers are not considered in the calculation of the indicators presented in this report.

The next two indicators give the total number of citations received (C+sc), and the total number of citations received, excluding self citations (C). A self-citation to a paper is a citation given in a publication of which at least one author (either first author or co-author) is also an author of the cited paper (either first author or co-author). The fourth indicator is the average number of citations per publication with exclusion of self-citations (CPP). The fifth indicator in the tables is the percentage of articles not cited during the time period considered (%Pnc).

The sixth indicator gives the ratio between the institution's CPP and the JCSm. For the sake of brevity we denote $CPP/JCSm$. This JCSm is the mean citation rate of the journals in which the institution has published (JCSm, the mean Journal Citation Score), taking into account both the type of paper (e.g., normal article, review), as well as the specific years in which the papers were published. To give an example, the number of citations received during the period 2003-2006 by a letter published in 2003 in journal X, is compared to the average number of citations received during the same period (2003-2006) by all letters published in the same journal (X) in the same year (2003). Of course, an institution as a whole publishes its papers in many journals. Therefore, we calculated a weighted average indicated as JSCm, with the weights determined by the number of papers published in each journal. We corrected for self-citations on this worldwide level.

The seventh indicator gives the ratio between the institution's CPP and the FCSm, the mean Field Citation Score. Again, we denote for brevity's sake $CPP/FCSm$. Our definition of a 'field' is based on a classification of scientific journals into categories developed by Thomson Scientific. Although this classification is far from perfect, it provides a good, first approximation. It is at present the only classification directly compatible with the structure of the data-system. In calculating FCSm, we used a similar procedure as the one we applied in the calculation of JCSm, with journals replaced by fields (i.e., sets of journals). Universities are active in many fields. Thus, we calculated a weighted average value, the weights being determined by the total number of papers the group has published in each field. Again: with corrections for self-citations.

If the ratio $CPP/FCSm$ is above 1.0, the institution is cited more frequently than an 'average' publication in the field(s). In this way, an indication of the international position of an institution, in terms of its impact compared to a worldwide average, is given. This worldwide average is calculated for the total ensemble of articles published in Thomson Scientific journals assigned to a particular

field. This indicator CPP/FCSm is our 'crown-indicator', because it emphasizes the position of an institution within worldwide, 'field-normalized' perspectives. About 80 percent of the world's scientific papers are authored by scientists from the United States, Canada, Western Europe, and Japan. Therefore, any 'worldwide average' is dominated by the Western world. If the ratio CPP/JCSm is above 1.0, the institution's papers exceed the mean impact of all articles published in the journals concerned. Thus, CPP/JCSm is the journal-based normalized impact. The next indicator is JCSm/FCSm. As can be deduced from the above given definitions, a value above 1.0 means that the citation score of all journals in which the institution has published exceeds the mean citation score of all papers published in the field(s) to which the journals belong. This implies that the institution publishes in journals with a (relatively) high impact.

Finally, we also calculated the percentage of self-citations (% Selfcits), relative to the total number of citations received. As discussed above, self-citations are excluded in the calculation of the ratio's CPP/FCSm and CPP/JCSm.

The percentage of self-citations is influenced by a number of factors, such as the field in which researchers are active; type of articles; age distribution of the articles; size of the aggregation level and number of articles; and the extent to which the papers are cognitively related.

All the above-defined indicators have been calculated with the following counting procedure. If indicators are given for the entire period 1993-2009, citations to 1993 publications are counted for 1993-2009, citations to 1999 publications are counted for 1999-2009, and so on. Next, we conducted a trend analysis, dividing the output in blocks of four years. In this analysis, we applied exactly the same procedure, with only a shorter citation window, which allows observing a possible trend in both output and citation impact.

Appendix C Annual output numbers for the Czech Republic and its benchmark countries, 1993-2009.

	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
AUSTRIA	4752	4978	5635	6051	6626	7182	7416	7473	8172	7970	9046	8700	9720	9388	9612	11374	11590
CZECH REPUBLIC	13	3368	3528	3930	3958	4202	4281	4416	4725	4910	5492	5408	6431	6483	6845	8713	8869
DENMARK	5897	6486	6707	6947	7116	8011	7988	8149	8332	8051	9099	8634	9779	9609	9768	11099	11425
FINLAND	5172	5668	6020	6397	6694	7096	7458	7709	7965	7686	8493	8093	8897	8976	8843	9928	10117
GERMANY	49548	53102	56425	59877	63031	69684	69897	70033	71640	69707	75402	71293	81677	79451	77857	88971	91188
HUNGARY	3047	3096	3372	3425	3587	3963	4166	4225	4480	4297	4779	4529	5320	5048	5016	5988	5833
NETHERLANDS	15956	16843	17923	18446	19155	19922	19777	20028	20473	20522	22845	22141	25783	25707	25667	29445	31157
SLOVENIA	691	739	867	898	1077	1083	1311	1650	1635	1640	1910	1800	2238	2109	2371	3328	3391
SWEDEN	11891	12597	13422	14330	14387	15440	15765	15430	16476	15920	17014	16097	18332	17695	17810	19471	19945

For 1993, publications from the Czech Republic were processed under the former name of the combined republic Czechoslovakia

Appendix D Bibliometric statistics for the Czech Republic and its benchmark countries, 1993-2009.

Period	P	C+sc	C	CPP	% Pnc	JCSm	FCSm	CPP/ FCSm	CPP/ JCSm	JCSm/ FCSm	% Self- Citations
AUSTRIA											
1993-2009	135,685	1,973,675	1,567,413	11.55	25%	10.97	10.82	1.05	1.07	0.99	21%
1993-1997	28,042	105,345	71,811	2.56	56%	2.63	2.48	0.97	1.03	0.94	32%
1994-1998	30,472	115,626	78,531	2.58	55%	2.66	2.51	0.97	1.03	0.94	32%
1995-1999	32,910	132,269	90,916	2.76	53%	2.78	2.67	0.99	1.03	0.96	31%
1996-2000	34,748	142,867	98,672	2.84	51%	2.89	2.83	0.98	1.00	0.98	31%
1997-2001	36,869	158,370	111,299	3.02	50%	3.03	2.98	1.00	1.01	0.99	30%
1998-2002	38,213	169,974	121,510	3.18	49%	3.12	3.10	1.02	1.03	0.99	29%
1999-2003	40,077	189,244	137,061	3.42	47%	3.24	3.27	1.05	1.05	1.01	28%
2000-2004	41,361	200,398	145,639	3.52	46%	3.30	3.35	1.07	1.05	1.01	27%
2001-2005	43,608	228,357	167,444	3.84	44%	3.54	3.60	1.08	1.07	1.02	27%
2002-2006	44,824	247,192	182,624	4.07	43%	3.67	3.82	1.11	1.07	1.04	26%
2003-2007	46,466	266,163	197,950	4.26	42%	3.78	3.97	1.13	1.07	1.05	26%
2004-2008	48,794	297,312	222,441	4.56	41%	3.89	4.18	1.17	1.09	1.08	25%
2005-2009	51,684	327,753	244,844	4.74	40%	4.02	4.35	1.18	1.09	1.08	25%

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Period	P	C+sc	C	CPP	% Pnc	JCSm	FCSm	CPP/ FCSm	CPP/ JCSm	JCSm/ FCSm	% Self- Citations
CZECH REPUBLIC											
1993-2009	85,572	716,375	492,613	5.76	36%	9.05	6.54	0.64	0.88	0.72	31%
1993-1997	14,797	24,757	12,922	0.87	73%	1.63	1.06	0.53	0.82	0.65	48%
1994-1998	18,986	41,849	22,801	1.20	67%	2.25	1.47	0.53	0.82	0.65	46%
1995-1999	19,899	46,651	25,437	1.28	66%	2.37	1.55	0.54	0.82	0.65	45%
1996-2000	20,787	50,487	27,717	1.33	65%	2.48	1.61	0.54	0.83	0.65	45%
1997-2001	21,582	55,418	31,569	1.46	63%	2.57	1.74	0.57	0.84	0.68	43%
1998-2002	22,534	61,315	35,546	1.58	62%	2.64	1.84	0.60	0.86	0.70	42%
1999-2003	23,824	69,481	41,490	1.74	60%	2.76	1.99	0.63	0.88	0.72	40%
2000-2004	24,951	75,578	46,069	1.85	59%	2.85	2.08	0.65	0.89	0.73	39%
2001-2005	26,966	87,918	54,907	2.04	56%	3.03	2.25	0.67	0.90	0.74	38%
2002-2006	28,724	99,373	63,359	2.21	55%	3.14	2.38	0.70	0.93	0.76	36%
2003-2007	30,659	114,257	73,833	2.41	53%	3.22	2.50	0.75	0.96	0.78	35%
2004-2008	33,880	134,351	87,244	2.58	52%	3.30	2.63	0.78	0.98	0.80	35%
2005-2009	37,341	157,770	103,008	2.76	50%	3.47	2.81	0.79	0.98	0.81	35%

Period	P	C+sc	C	CPP	% Pnc	JCSm	FCSm	CPP/ FCSm	CPP/ JCSm	JCSm/ FCSm	% Self- Citations
DENMARK											
1993-2009	143,097	2,691,612	2,163,410	15.12	18%	11.95	13.24	1.27	1.14	1.11	20%
1993-1997	33,153	162,588	114,059	3.44	46%	3.02	3.04	1.14	1.13	1.00	30%
1994-1998	35,267	173,517	120,893	3.43	45%	3.01	3.10	1.14	1.11	1.03	30%
1995-1999	36,769	183,941	128,332	3.49	44%	3.03	3.18	1.15	1.10	1.05	30%
1996-2000	38,211	194,054	136,072	3.56	44%	3.05	3.27	1.17	1.09	1.07	30%
1997-2001	39,596	213,001	151,652	3.83	42%	3.17	3.47	1.21	1.10	1.09	29%
1998-2002	40,531	226,750	163,424	4.03	41%	3.30	3.64	1.22	1.11	1.10	28%
1999-2003	41,619	243,967	178,163	4.28	40%	3.42	3.83	1.25	1.12	1.12	27%
2000-2004	42,265	256,283	188,996	4.47	40%	3.47	3.93	1.29	1.14	1.13	26%
2001-2005	43,895	280,859	209,133	4.76	38%	3.66	4.18	1.30	1.14	1.14	26%
2002-2006	45,172	296,298	221,081	4.89	37%	3.78	4.33	1.29	1.13	1.15	25%
2003-2007	46,889	327,771	246,773	5.26	36%	3.93	4.54	1.34	1.16	1.16	25%
2004-2008	48,889	353,536	268,727	5.50	35%	4.06	4.73	1.35	1.16	1.16	24%
2005-2009	51,680	391,931	298,532	5.78	33%	4.23	4.95	1.36	1.17	1.17	24%

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Period	P	C+sc	C	CPP	% Pnc	JCSm	FCSm	CPP/ FCSm	CPP/ JCSm	JCSm/ FCSm	% Self- Citations
FINLAND											
1993-2009	131,212	2,209,274	1,775,041	13.53	20%	11.34	12.45	1.19	1.09	1.10	20%
1993-1997	29,951	134,352	95,245	3.18	50%	2.68	2.79	1.18	1.14	1.04	29%
1994-1998	31,875	147,741	104,731	3.29	49%	2.72	2.90	1.21	1.13	1.07	29%
1995-1999	33,665	156,843	110,549	3.28	48%	2.78	3.00	1.18	1.10	1.08	30%
1996-2000	35,354	166,969	118,177	3.34	47%	2.82	3.06	1.18	1.09	1.09	29%
1997-2001	36,922	181,702	129,788	3.52	46%	2.94	3.25	1.19	1.08	1.10	29%
1998-2002	37,914	191,194	137,374	3.62	45%	3.06	3.35	1.18	1.08	1.09	28%
1999-2003	39,311	206,766	150,433	3.83	44%	3.26	3.58	1.18	1.07	1.10	27%
2000-2004	39,946	215,540	158,137	3.96	43%	3.30	3.65	1.20	1.08	1.11	27%
2001-2005	41,134	230,277	169,828	4.13	42%	3.46	3.83	1.19	1.08	1.11	26%
2002-2006	42,145	239,210	177,117	4.20	41%	3.52	3.95	1.19	1.06	1.12	26%
2003-2007	43,302	247,518	182,965	4.23	40%	3.63	4.05	1.16	1.04	1.12	26%
2004-2008	44,737	266,282	197,718	4.42	39%	3.78	4.18	1.17	1.06	1.10	26%
2005-2009	46,761	295,207	220,186	4.71	37%	3.93	4.39	1.20	1.07	1.12	25%

Period	P	C+sc	C	CPP	% Pnc	JCSm	FCSm	CPP/ FCSm	CPP/ JCSm	JCSm/ FCSm	% Self- Citations
GERMANY											
1993-2009	1,198,783	18,359,597	14,518,829	12.11	24%	11.39	11.34	1.06	1.07	1.00	21%
1993-1997	281,983	1,167,296	801,472	2.84	53%	2.71	2.61	1.05	1.09	0.96	31%
1994-1998	302,119	1,273,419	874,620	2.89	53%	2.73	2.67	1.06	1.08	0.98	31%
1995-1999	318,914	1,378,346	951,819	2.98	51%	2.80	2.78	1.07	1.07	0.99	31%
1996-2000	332,522	1,477,527	1,029,840	3.10	50%	2.88	2.89	1.07	1.07	1.00	30%
1997-2001	344,285	1,591,481	1,123,600	3.26	49%	3.02	3.05	1.08	1.07	1.01	29%
1998-2002	350,961	1,692,450	1,211,952	3.45	48%	3.15	3.20	1.10	1.08	1.02	28%
1999-2003	356,679	1,802,553	1,304,215	3.66	46%	3.30	3.40	1.11	1.08	1.03	28%
2000-2004	358,075	1,858,646	1,353,202	3.78	46%	3.38	3.50	1.12	1.08	1.04	27%
2001-2005	369,719	2,027,302	1,483,583	4.01	44%	3.57	3.71	1.12	1.08	1.04	27%
2002-2006	377,530	2,144,879	1,575,815	4.17	43%	3.69	3.88	1.13	1.08	1.05	27%
2003-2007	385,680	2,264,349	1,664,237	4.32	42%	3.81	4.03	1.13	1.07	1.06	27%
2004-2008	399,249	2,455,705	1,814,802	4.55	41%	3.96	4.23	1.15	1.07	1.07	26%
2005-2009	419,144	2,721,355	2,015,260	4.81	39%	4.13	4.47	1.16	1.08	1.08	26%

Period	P	C+sc	C	CPP	% Pnc	JCSm	FCSm	CPP/ FCSm	CPP/ JCSm	JCSm/ FCSm	% Self- Citations
HUNGARY											
1993-2009	74,171	797,784	592,208	7.98	29%	10.30	8.92	0.78	0.90	0.87	26%
1993-1997	16,527	44,763	27,357	1.66	63%	2.49	2.02	0.66	0.82	0.81	39%
1994-1998	17,443	48,527	29,582	1.70	62%	2.45	2.04	0.69	0.83	0.83	39%
1995-1999	18,513	52,092	31,737	1.71	61%	2.48	2.04	0.69	0.84	0.82	39%
1996-2000	19,366	56,214	34,268	1.77	59%	2.55	2.16	0.69	0.82	0.85	39%
1997-2001	20,421	62,648	39,095	1.91	58%	2.70	2.28	0.71	0.84	0.85	38%
1998-2002	21,131	68,442	43,868	2.08	56%	2.83	2.42	0.73	0.86	0.86	36%
1999-2003	21,947	76,043	50,280	2.29	55%	3.00	2.61	0.76	0.88	0.87	34%
2000-2004	22,310	83,014	56,089	2.51	53%	3.10	2.74	0.81	0.92	0.88	32%
2001-2005	23,405	95,981	66,243	2.83	51%	3.30	2.94	0.86	0.96	0.89	31%
2002-2006	23,973	105,724	74,491	3.11	49%	3.42	3.13	0.91	0.99	0.91	30%
2003-2007	24,692	110,637	78,778	3.19	48%	3.57	3.28	0.89	0.97	0.92	29%
2004-2008	25,901	120,651	86,798	3.35	46%	3.71	3.43	0.90	0.98	0.93	28%
2005-2009	27,205	132,414	96,039	3.53	45%	3.83	3.58	0.92	0.99	0.93	27%

Period	P	C+sc	C	CPP	% Pnc	JCSm	FCSm	CPP/ FCSm	CPP/ JCSm	JCSm/ FCSm	% Self- Citations
THE NETHERLANDS											
1993-2009	371,790	6,871,365	5,619,692	15.12	19%	11.67	13.66	1.30	1.11	1.17	18%
1993-1997	88,323	427,456	304,431	3.45	47%	2.86	3.17	1.20	1.09	1.11	29%
1994-1998	92,289	460,499	330,077	3.58	46%	2.88	3.27	1.24	1.10	1.13	28%
1995-1999	95,223	490,494	354,671	3.72	44%	2.98	3.40	1.25	1.09	1.14	28%
1996-2000	97,328	508,156	370,511	3.81	44%	3.04	3.47	1.25	1.10	1.14	27%
1997-2001	99,355	546,828	404,320	4.07	43%	3.18	3.67	1.28	1.11	1.16	26%
1998-2002	100,722	563,231	419,058	4.16	42%	3.25	3.79	1.28	1.10	1.16	26%
1999-2003	103,645	600,750	450,544	4.35	41%	3.36	3.97	1.29	1.10	1.18	25%
2000-2004	106,009	622,166	468,597	4.42	41%	3.41	4.05	1.30	1.09	1.19	25%
2001-2005	111,764	694,361	527,092	4.72	39%	3.58	4.25	1.32	1.11	1.19	24%
2002-2006	116,998	756,539	576,828	4.93	38%	3.72	4.45	1.33	1.11	1.20	24%
2003-2007	122,143	824,247	630,338	5.16	37%	3.87	4.64	1.33	1.11	1.20	24%
2004-2008	128,743	904,800	694,163	5.39	36%	4.03	4.90	1.34	1.10	1.22	23%
2005-2009	137,759	1,009,558	776,101	5.63	34%	4.19	5.14	1.34	1.10	1.23	23%

Period	P	C+sc	C	CPP	% Pnc	JCSm	FCSm	CPP/ FCSm	CPP/ JCSm	JCSm/ FCSm	% Self- Citations
SLOVENIA											
1993-2009	28,738	224,206	159,261	5.54	37%	7.67	6.35	0.72	0.87	0.83	29%
1993-1997	4,272	10,451	6,310	1.48	63%	2.03	1.75	0.73	0.84	0.86	40%
1994-1998	4,664	10,603	6,200	1.33	64%	2.03	1.70	0.66	0.78	0.84	42%
1995-1999	5,236	12,747	7,358	1.41	65%	1.97	1.71	0.71	0.82	0.87	42%
1996-2000	6,019	14,117	8,047	1.34	66%	1.92	1.60	0.70	0.84	0.83	43%
1997-2001	6,756	16,148	9,301	1.38	64%	2.03	1.65	0.68	0.83	0.81	42%
1998-2002	7,319	18,357	10,874	1.49	63%	2.16	1.76	0.69	0.84	0.82	41%
1999-2003	8,146	21,531	13,118	1.61	62%	2.39	1.87	0.67	0.86	0.78	39%
2000-2004	8,635	23,136	14,427	1.67	60%	2.56	1.98	0.65	0.84	0.78	38%
2001-2005	9,223	26,697	17,156	1.86	58%	2.64	2.09	0.70	0.89	0.79	36%
2002-2006	9,697	29,580	19,270	1.99	56%	2.80	2.25	0.71	0.88	0.80	35%
2003-2007	10,428	32,676	21,607	2.07	55%	2.87	2.39	0.72	0.87	0.83	34%
2004-2008	11,846	38,069	25,076	2.12	55%	2.83	2.39	0.75	0.89	0.85	34%
2005-2009	13,437	46,205	30,981	2.31	53%	2.95	2.54	0.78	0.91	0.86	33%

Period	P	C+sc	C	CPP	% Pnc	JCSm	FCSm	CPP/ FCSm	CPP/ JCSm	JCSm/ FCSm	% Self- Citations
SWEDEN											
1993-2009	272,022	4,934,775	4,002,460	14.71	18%	12.30	13.25	1.20	1.11	1.08	19%
1993-1997	66,627	319,070	222,636	3.34	47%	2.98	3.03	1.12	1.10	1.02	30%
1994-1998	70,176	344,523	242,535	3.46	46%	3.02	3.12	1.14	1.11	1.03	30%
1995-1999	73,344	362,988	256,197	3.49	45%	3.07	3.18	1.14	1.10	1.04	29%
1996-2000	75,352	379,842	272,087	3.61	44%	3.13	3.28	1.15	1.10	1.05	28%
1997-2001	77,498	400,435	290,348	3.75	43%	3.21	3.39	1.17	1.11	1.05	27%
1998-2002	79,031	416,803	304,771	3.86	43%	3.30	3.51	1.17	1.10	1.06	27%
1999-2003	80,605	439,318	324,723	4.03	41%	3.45	3.69	1.17	1.09	1.07	26%
2000-2004	80,937	454,814	339,688	4.20	41%	3.53	3.82	1.19	1.10	1.08	25%
2001-2005	83,839	498,221	375,711	4.48	39%	3.75	4.05	1.19	1.11	1.08	25%
2002-2006	85,058	517,765	392,177	4.61	38%	3.86	4.18	1.20	1.10	1.08	24%
2003-2007	86,948	549,982	417,608	4.80	38%	3.96	4.34	1.21	1.11	1.10	24%
2004-2008	89,405	589,273	450,117	5.03	36%	4.10	4.56	1.23	1.10	1.11	24%
2005-2009	93,253	646,038	494,791	5.31	35%	4.25	4.83	1.25	1.10	1.13	23%

Appendix E Annual output numbers 1993-2009

Annual output numbers for the Czech Republic across fields, 1993-2009.

	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
AGRICULTURE AND FOOD SCIENCE	0	218	205	230	223	207	195	228	246	225	230	204	232	228	250	497	473
ASTRONOMY AND ASTROPHYSICS	0	54	80	93	103	87	94	99	103	98	107	119	159	185	148	222	189
BASIC LIFE SCIENCES	0	388	354	440	494	469	476	532	572	577	667	652	747	723	815	918	912
BASIC MEDICAL SCIENCES	0	30	27	41	48	37	39	44	39	49	68	45	64	94	96	94	95
BIOLOGICAL SCIENCES	0	282	302	350	341	292	354	364	353	389	439	465	545	559	650	800	827
BIOMEDICAL SCIENCES	0	259	293	360	440	398	409	392	458	449	532	541	624	606	755	967	894
CHEMISTRY AND CHEMICAL ENGINEERING	8	869	820	1050	940	1094	986	966	1025	1087	1115	1170	1254	1384	1454	1516	1682
CIVIL ENGINEERING AND CONSTRUCTION	0	9	19	7	8	8	13	16	12	13	16	15	19	32	28	34	59
CLINICAL MEDICINE	1	341	375	414	482	506	537	583	665	683	876	781	980	970	1162	1603	1371
COMPUTER SCIENCES	0	66	101	101	89	104	109	153	145	125	321	289	323	334	191	251	219
CREATIVE ARTS, CULTURE AND MUSIC	0	3	5	7	2	14	6	9	6	10	5	4	20	17	18	11	40
EARTH SCIENCES AND TECHNOLOGY	0	99	135	144	118	143	163	156	168	166	223	207	221	286	237	438	412
ECONOMICS AND BUSINESS	0	75	55	50	68	53	106	105	94	119	71	87	83	75	89	225	213
EDUCATIONAL SCIENCES	0	2	1	5	3	0	2	4	1	7	5	5	3	1	6	18	13
ELECTRICAL ENGINEERING AND TELECOMMUNICATION	0	83	52	45	56	54	58	67	67	59	80	94	87	103	87	229	186
ENERGY SCIENCE AND TECHNOLOGY	0	82	75	76	88	92	94	73	91	105	110	130	121	153	131	292	213

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	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
ENVIRONMENTAL SCIENCES AND TECHNOLOGY	0	89	114	113	120	105	127	126	164	196	203	237	248	302	309	402	477
GENERAL AND INDUSTRIAL ENGINEERING	0	9	7	19	12	15	10	13	12	20	20	11	30	25	29	43	56
HEALTH SCIENCES	0	11	20	8	27	15	12	16	13	7	20	11	18	25	35	32	31
HISTORY, PHILOSOPHY AND RELIGION	1	42	27	33	23	64	34	30	14	32	17	16	44	40	46	52	89
INFORMATION AND COMMUNICATION SCIENCES	0	1	4	1	0	0	0	3	0	0	3	4	1	3	4	8	3
INSTRUMENTS AND INSTRUMENTATION	0	41	45	47	57	61	68	55	69	70	76	89	94	88	109	121	155
LANGUAGE AND LINGUISTICS	0	2	2	2	1	1	3	3	2	0	0	1	4	4	2	3	18
LAW AND CRIMINOLOGY	0	2	4	0	1	7	3	4	3	5	1	3	4	6	5	10	3
LITERATURE	0	16	28	20	19	25	28	17	16	10	5	0	26	31	19	23	25
MANAGEMENT AND PLANNING	0	6	11	9	4	8	10	7	18	9	7	7	11	12	11	34	60
MATHEMATICS & STATISTICAL SCIENCES	0	152	197	175	220	187	213	237	269	241	285	245	266	320	375	493	496
MECHANICAL ENGINEERING AND AEROSPACE	0	40	25	51	70	31	35	45	43	37	46	51	51	73	75	86	77
MULTIDISCIPLINARY JOURNALS	0	8	14	13	28	7	23	18	21	24	15	21	25	34	39	37	58
PHYSICS AND MATERIALS SCIENCE	3	752	842	892	907	1054	1159	1093	1187	1370	1317	1301	1643	1511	1568	1712	1877
POLITICAL SCIENCE AND PUBLIC ADMINISTRATION	0	75	52	47	59	43	47	45	50	45	37	49	42	44	44	55	49
PSYCHOLOGY	0	46	59	56	49	56	43	45	41	43	39	50	46	58	76	67	62
SOCIAL AND BEHAVIORAL SCIENCES, INTERDISCIPLINARY	0	8	2	5	7	7	5	1	4	5	6	8	3	5	7	8	8
SOCIOLOGY AND ANTHROPOLOGY	0	41	25	37	29	27	34	31	29	40	20	48	37	36	50	72	65

For 1993, publications from the Czech Republic were still processed under the former name of the combined republic Czechoslovakia

Annual output numbers for Austria across fields, 1993-2009.

	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
AGRICULTURE AND FOOD SCIENCE	101	100	108	100	169	150	143	174	172	175	201	158	206	217	221	311	295
ASTRONOMY AND ASTROPHYSICS	46	60	70	81	116	128	123	107	138	138	164	175	189	207	192	265	310
BASIC LIFE SCIENCES	504	569	670	710	885	884	907	910	977	1031	1083	1029	1163	1161	1272	1376	1441
BASIC MEDICAL SCIENCES	61	72	90	117	101	116	128	96	118	126	145	140	176	164	187	224	235
BIOLOGICAL SCIENCES	248	247	279	287	313	340	379	361	404	411	465	446	518	526	559	636	698
BIOMEDICAL SCIENCES	729	656	799	985	1009	1056	1115	1058	1169	1149	1230	1197	1325	1238	1218	1503	1357
CHEMISTRY AND CHEMICAL ENGINEERING	614	627	751	717	851	860	896	870	1044	902	1022	1025	1113	1000	1037	1193	1263
CIVIL ENGINEERING AND CONSTRUCTION	8	5	18	12	11	25	17	18	16	19	25	23	22	37	54	109	107
CLINICAL MEDICINE	1563	1727	1854	1962	2241	2471	2535	2569	2737	2642	2969	2790	3129	2945	3124	3465	3507
COMPUTER SCIENCES	199	146	169	190	164	230	263	251	275	288	541	532	534	569	313	352	358
CREATIVE ARTS, CULTURE AND MUSIC	27	36	30	39	56	42	60	58	37	48	36	29	46	54	31	36	67
EARTH SCIENCES AND TECHNOLOGY	112	109	143	152	168	168	228	252	340	318	310	348	333	395	379	481	607
ECONOMICS AND BUSINESS	56	44	57	68	52	65	53	62	72	78	95	107	126	106	145	198	193
EDUCATIONAL SCIENCES	5	7	6	8	4	9	10	12	6	15	15	19	13	13	6	22	25
ELECTRICAL ENGINEERING AND TELECOMMUNICATION	89	120	109	111	89	140	115	158	154	157	189	178	195	216	224	240	300
ENERGY SCIENCE AND TECHNOLOGY	105	103	109	121	90	100	115	119	148	140	150	165	131	165	186	242	189

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	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
ENVIRONMENTAL SCIENCES AND TECHNOLOGY	123	131	161	155	174	206	254	232	296	286	338	335	364	412	464	644	615
GENERAL AND INDUSTRIAL ENGINEERING	19	24	25	26	21	37	21	35	33	34	49	46	48	48	56	87	74
HEALTH SCIENCES	21	20	30	44	55	58	69	76	112	72	125	101	117	115	121	187	184
HISTORY, PHILOSOPHY AND RELIGION	36	42	30	21	21	30	33	37	48	41	33	30	64	47	47	62	88
INFORMATION AND COMMUNICATION SCIENCES	3	4	11	7	4	10	16	8	11	15	15	9	10	8	7	15	21
INSTRUMENTS AND INSTRUMENTATION	70	78	85	91	89	73	69	94	86	93	118	93	133	110	140	147	140
LANGUAGE AND LINGUISTICS	10	14	3	21	10	17	15	14	17	19	14	20	23	13	15	26	37
LAW AND CRIMINOLOGY	7	7	17	17	24	21	16	20	17	20	18	22	23	21	30	44	33
LITERATURE	12	12	36	22	24	30	24	16	13	22	25	14	42	14	20	22	29
MANAGEMENT AND PLANNING	24	27	43	34	42	53	60	62	60	55	65	56	52	62	75	97	135
MATHEMATICS & STATISTICAL SCIENCES	187	194	206	213	257	239	239	264	325	303	330	322	368	378	413	514	539
MECHANICAL ENGINEERING AND AEROSPACE	80	92	51	88	90	95	65	85	143	107	110	99	103	90	128	107	117
MULTIDISCIPLINARY JOURNALS	51	49	41	55	53	77	69	42	57	56	55	73	93	72	103	106	109
PHYSICS AND MATERIALS SCIENCE	757	829	1018	1159	1073	1208	1255	1283	1327	1331	1502	1436	1669	1527	1622	1880	1754
POLITICAL SCIENCE AND PUBLIC ADMINISTRATION	34	29	28	36	21	40	33	34	25	12	29	23	30	29	30	47	71
PSYCHOLOGY	37	67	57	76	78	74	69	62	87	78	114	105	115	126	118	175	198
SOCIAL AND BEHAVIORAL SCIENCES, INTERDISCIPLINARY	39	21	29	22	13	17	26	21	23	24	48	40	44	46	41	76	65
SOCIOLOGY AND ANTHROPOLOGY	20	25	17	12	12	14	23	32	20	21	24	34	19	26	38	48	57

Annual output numbers for Denmark across fields, 1993-2009.

	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
AGRICULTURE AND FOOD SCIENCE	211	256	347	314	318	447	397	494	437	480	573	537	524	554	612	643	572
ASTRONOMY AND ASTROPHYSICS	88	108	111	128	138	161	172	182	161	173	177	164	158	185	167	170	210
BASIC LIFE SCIENCES	973	1020	1117	1111	1181	1281	1296	1231	1357	1271	1389	1367	1481	1420	1458	1622	1630
BASIC MEDICAL SCIENCES	45	64	68	87	88	94	83	95	103	107	132	133	161	149	155	172	172
BIOLOGICAL SCIENCES	365	441	482	424	563	588	637	661	653	679	748	641	738	704	764	820	855
BIOMEDICAL SCIENCES	961	1025	965	1009	1040	1156	1127	1165	1177	1144	1287	1177	1380	1412	1476	1495	1625
CHEMISTRY AND CHEMICAL ENGINEERING	521	574	624	597	678	758	747	747	760	724	760	782	889	815	844	941	1015
CIVIL ENGINEERING AND CONSTRUCTION	37	43	54	33	58	69	58	46	41	68	66	67	68	79	101	87	89
CLINICAL MEDICINE	2132	2293	2246	2284	2253	2395	2494	2429	2465	2389	2769	2508	3097	2984	3190	3543	3572
COMPUTER SCIENCES	161	143	102	169	136	170	245	233	201	199	370	384	352	366	200	208	232
CREATIVE ARTS, CULTURE AND MUSIC	14	15	20	15	23	17	13	19	17	13	14	18	30	37	25	36	31
EARTH SCIENCES AND TECHNOLOGY	185	213	261	280	277	355	376	407	450	427	497	416	431	508	534	558	517
ECONOMICS AND BUSINESS	62	67	62	85	74	103	93	102	115	120	122	123	172	151	155	213	235
EDUCATIONAL SCIENCES	6	11	13	14	3	9	3	9	10	11	15	11	13	14	17	38	51
ELECTRICAL ENGINEERING AND TELECOMMUNICATION	92	111	113	96	100	128	157	158	154	119	159	176	198	231	215	222	273
ENERGY SCIENCE AND TECHNOLOGY	96	85	96	112	90	107	77	132	105	113	121	115	118	161	145	166	190

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	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
ENVIRONMENTAL SCIENCES AND TECHNOLOGY	222	278	347	378	332	478	446	461	478	531	541	551	589	625	672	781	804
GENERAL AND INDUSTRIAL ENGINEERING	22	49	49	51	37	70	48	47	89	60	82	90	79	70	91	100	97
HEALTH SCIENCES	71	76	96	91	88	157	130	149	143	166	187	178	221	246	247	324	334
HISTORY, PHILOSOPHY AND RELIGION	30	22	36	36	23	26	34	49	39	46	28	46	56	46	56	102	149
INFORMATION AND COMMUNICATION SCIENCES	9	10	6	23	13	19	21	32	20	19	14	31	28	24	22	47	46
INSTRUMENTS AND INSTRUMENTATION	48	45	60	76	67	58	69	74	83	74	83	79	85	80	79	103	77
LANGUAGE AND LINGUISTICS	7	13	16	13	13	21	10	15	16	21	21	14	20	10	12	34	48
LAW AND CRIMINOLOGY	19	17	17	18	14	17	19	14	9	22	14	13	15	25	24	36	31
LITERATURE	17	7	11	9	7	20	14	15	27	24	17	12	28	15	14	19	13
MANAGEMENT AND PLANNING	22	31	40	50	50	58	57	70	79	71	87	71	92	79	106	130	171
MATHEMATICS & STATISTICAL SCIENCES	127	147	178	186	190	197	219	190	206	208	239	229	217	224	202	242	279
MECHANICAL ENGINEERING AND AEROSPACE	60	63	57	89	77	101	88	80	104	94	115	104	120	125	118	164	145
MULTIDISCIPLINARY JOURNALS	67	79	61	66	69	90	83	67	57	83	115	76	83	114	125	110	122
PHYSICS AND MATERIALS SCIENCE	821	964	938	1029	1148	1215	1149	1140	1136	1067	1111	1089	1212	1043	1127	1307	1316
POLITICAL SCIENCE AND PUBLIC ADMINISTRATION	18	20	15	20	25	30	35	33	39	25	34	41	56	45	70	83	74
PSYCHOLOGY	46	41	44	44	26	44	51	60	59	65	74	78	99	87	120	110	150
SOCIAL AND BEHAVIORAL SCIENCES, INTERDISCIPLINARY	18	22	33	22	29	31	30	34	41	40	64	58	71	66	61	100	97
SOCIOLOGY AND ANTHROPOLOGY	11	17	18	26	17	17	26	30	33	33	31	44	47	39	53	90	95

Annual output numbers for Finland across fields, 1993-2009.

	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
AGRICULTURE AND FOOD SCIENCE	221	208	210	226	271	300	279	313	270	326	316	297	343	380	358	420	409
ASTRONOMY AND ASTROPHYSICS	84	102	92	106	108	139	128	152	173	164	186	168	210	238	184	252	262
BASIC LIFE SCIENCES	720	685	825	788	839	875	978	939	1037	1073	1025	1000	1098	1096	1138	1154	1165
BASIC MEDICAL SCIENCES	43	70	70	89	85	105	80	84	91	100	110	85	117	149	110	158	137
BIOLOGICAL SCIENCES	305	326	380	417	414	486	477	465	475	479	514	526	561	597	569	640	665
BIOMEDICAL SCIENCES	771	805	931	936	930	959	1044	977	1088	975	1133	969	1080	1029	1022	1107	1119
CHEMISTRY AND CHEMICAL ENGINEERING	550	588	657	671	745	747	828	802	858	888	914	925	965	998	949	1034	1105
CIVIL ENGINEERING AND CONSTRUCTION	8	32	26	12	19	26	21	25	19	46	42	24	27	39	41	56	54
CLINICAL MEDICINE	1849	2053	2102	2202	2377	2288	2453	2491	2491	2276	2388	2264	2498	2392	2390	2676	2552
COMPUTER SCIENCES	172	140	134	193	149	231	240	264	242	238	441	436	476	519	294	329	316
CREATIVE ARTS, CULTURE AND MUSIC	16	11	10	13	14	15	16	23	21	12	22	25	19	17	31	37	46
EARTH SCIENCES AND TECHNOLOGY	121	122	149	226	191	219	214	278	279	282	354	304	383	356	405	482	446
ECONOMICS AND BUSINESS	79	91	52	62	45	75	69	74	93	72	80	86	111	119	126	187	192
EDUCATIONAL SCIENCES	12	13	26	19	24	32	37	36	43	31	53	39	56	43	47	97	104
ELECTRICAL ENGINEERING AND TELECOMMUNICATION	121	136	161	164	149	215	253	221	258	284	363	294	366	439	399	415	465
ENERGY SCIENCE AND TECHNOLOGY	105	91	102	106	77	103	106	106	120	124	151	155	166	190	167	186	196

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	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
ENVIRONMENTAL SCIENCES AND TECHNOLOGY	267	346	360	414	442	489	505	540	661	727	713	714	834	795	863	915	921
GENERAL AND INDUSTRIAL ENGINEERING	47	49	62	64	49	71	54	63	77	87	87	90	83	109	88	119	150
HEALTH SCIENCES	113	137	151	197	206	228	222	243	262	230	277	235	236	294	298	348	353
HISTORY, PHILOSOPHY AND RELIGION	23	20	17	18	41	30	38	30	42	30	33	45	47	40	46	81	101
INFORMATION AND COMMUNICATION SCIENCES	14	13	13	14	21	14	25	13	30	21	40	40	34	45	50	40	59
INSTRUMENTS AND INSTRUMENTATION	56	68	79	76	83	80	100	87	95	97	100	102	104	109	111	131	149
LANGUAGE AND LINGUISTICS	15	13	10	17	7	13	22	34	25	22	20	27	31	32	29	42	52
LAW AND CRIMINOLOGY	5	11	11	22	16	16	9	12	19	12	25	22	19	17	23	29	24
LITERATURE	7	7	6	6	5	6	6	5	10	5	4	4	8	8	8	11	6
MANAGEMENT AND PLANNING	36	50	57	59	50	78	55	63	89	84	83	78	91	99	107	153	219
MATHEMATICS & STATISTICAL SCIENCES	120	135	124	138	136	147	184	200	172	198	213	191	179	221	243	292	281
MECHANICAL ENGINEERING AND AEROSPACE	26	20	39	38	32	33	35	41	62	58	55	68	67	100	81	99	108
MULTIDISCIPLINARY JOURNALS	41	29	32	54	43	37	57	65	40	40	35	39	44	47	71	68	83
PHYSICS AND MATERIALS SCIENCE	564	689	726	793	815	881	940	1010	1027	1022	1130	1093	1131	1222	1192	1360	1410
POLITICAL SCIENCE AND PUBLIC ADMINISTRATION	10	11	11	11	19	20	16	12	14	13	19	26	24	25	29	34	42
PSYCHOLOGY	78	83	94	102	105	125	132	137	137	138	171	160	184	162	191	202	231
SOCIAL AND BEHAVIORAL SCIENCES, INTERDISCIPLINARY	18	33	25	19	32	58	30	47	51	51	51	59	51	59	56	75	78
SOCIOLOGY AND ANTHROPOLOGY	8	21	21	25	21	30	27	16	16	29	43	35	30	37	44	72	80

Annual output numbers for Germany across fields, 1993-2009.

	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
AGRICULTURE AND FOOD SCIENCE	1292	1315	1476	1399	1643	1682	1560	1626	1538	1716	1656	1474	2009	1866	1964	2517	2349
ASTRONOMY AND ASTROPHYSICS	990	1283	1379	1526	1555	1631	1581	1749	1789	1993	1973	2082	2062	2258	2114	2603	2729
BASIC LIFE SCIENCES	5895	6477	7157	7543	7961	8397	8585	8338	8617	8345	8981	8562	9857	9562	9567	10406	10197
BASIC MEDICAL SCIENCES	591	677	675	709	659	882	780	863	909	965	977	941	1134	1147	1269	1426	1543
BIOLOGICAL SCIENCES	2402	2436	2784	2770	2915	3189	3219	3373	3233	3256	3571	3391	4149	3988	4225	4736	4754
BIOMEDICAL SCIENCES	5961	6165	6741	7248	7882	8793	8784	8720	8961	8938	9357	8861	10009	9746	9766	11026	11143
CHEMISTRY AND CHEMICAL ENGINEERING	8873	9043	9957	9966	10267	11136	10644	10136	10458	10001	10352	10222	11408	10675	10551	11483	12063
CIVIL ENGINEERING AND CONSTRUCTION	150	173	172	142	176	183	169	164	161	218	183	181	209	416	315	889	618
CLINICAL MEDICINE	11317	12802	13149	14101	15606	17093	17656	17729	18201	17850	18970	17469	20497	19504	20312	22905	23419
COMPUTER SCIENCES	1624	1077	1059	1392	1324	1654	1984	2048	1983	1765	3238	3450	3443	3700	1630	1740	1900
CREATIVE ARTS, CULTURE AND MUSIC	230	265	257	236	272	296	273	352	260	241	241	222	320	219	246	239	374
EARTH SCIENCES AND TECHNOLOGY	1203	1315	1568	1615	1853	1983	2454	2565	2550	2392	3017	2754	3261	3245	3252	3805	4095
ECONOMICS AND BUSINESS	338	254	271	265	300	376	392	463	469	470	556	599	684	816	857	1279	1398
EDUCATIONAL SCIENCES	160	112	176	129	152	152	154	174	131	171	192	203	209	244	313	362	391
ELECTRICAL ENGINEERING AND TELECOMMUNICATION	1157	1411	1330	1442	1324	1517	1524	1566	1657	1418	1610	1490	1568	1705	1721	2027	2119
ENERGY SCIENCE AND TECHNOLOGY	1140	1175	1228	1222	1263	1294	1267	1327	1476	1358	1585	1208	1369	1486	1450	1413	1747

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	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
ENVIRONMENTAL SCIENCES AND TECHNOLOGY	974	1164	1166	1205	1410	1641	1771	1719	1769	2006	2023	1979	2557	2706	2808	3431	3497
GENERAL AND INDUSTRIAL ENGINEERING	227	279	284	334	324	406	331	326	407	396	430	390	456	523	576	677	716
HEALTH SCIENCES	202	226	250	256	343	424	459	474	573	612	645	643	801	806	868	1068	1142
HISTORY, PHILOSOPHY AND RELIGION	375	395	380	379	450	519	561	585	599	571	464	511	648	505	525	660	858
INFORMATION AND COMMUNICATION SCIENCES	64	54	133	83	86	94	123	94	154	83	107	63	72	88	97	144	157
INSTRUMENTS AND INSTRUMENTATION	764	854	996	999	1018	1049	1065	1010	1085	998	1098	968	1023	1029	1010	1106	1047
LANGUAGE AND LINGUISTICS	134	136	125	151	173	203	185	252	217	163	152	236	261	208	186	278	300
LAW AND CRIMINOLOGY	134	134	193	171	214	170	198	222	186	183	190	177	194	198	190	353	330
LITERATURE	162	181	178	161	211	277	252	241	196	204	152	220	336	228	188	212	222
MANAGEMENT AND PLANNING	150	199	223	193	235	268	282	288	356	272	333	304	340	421	433	529	648
MATHEMATICS & STATISTICAL SCIENCES	1767	1819	1893	2067	2119	2362	2387	2622	2502	2315	2519	2239	2503	2577	2434	3200	3243
MECHANICAL ENGINEERING AND AEROSPACE	813	829	758	875	830	811	759	1005	1006	874	873	796	944	1036	972	1150	1095
MULTIDISCIPLINARY JOURNALS	531	598	588	726	570	650	816	650	645	652	629	694	767	746	820	831	1005
PHYSICS AND MATERIALS SCIENCE	10851	11956	12744	13984	14297	16359	15667	15530	16139	15992	16712	15210	17591	16654	16446	18250	18353
POLITICAL SCIENCE AND PUBLIC ADMINISTRATION	255	244	228	241	203	207	242	210	229	221	263	235	278	326	331	411	429
PSYCHOLOGY	634	728	779	844	814	1019	986	1036	1179	1128	1188	1162	1316	1519	1549	1883	2057
SOCIAL AND BEHAVIORAL SCIENCES, INTERDISCIPLINARY	231	141	163	139	146	166	146	210	191	195	196	216	213	289	247	359	384
SOCIOLOGY AND ANTHROPOLOGY	145	165	186	201	166	171	210	208	187	225	235	233	245	252	295	400	436

Annual output numbers for Hungary across fields, 1993-2009.

	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
AGRICULTURE AND FOOD SCIENCE	127	150	163	158	157	182	142	165	189	166	221	124	294	325	346	532	304
ASTRONOMY AND ASTROPHYSICS	44	44	44	62	66	63	56	80	89	97	84	96	84	93	120	103	142
BASIC LIFE SCIENCES	391	380	402	409	440	472	592	511	570	585	640	638	697	707	660	806	751
BASIC MEDICAL SCIENCES	28	31	30	33	53	68	65	60	66	65	52	63	68	77	62	79	96
BIOLOGICAL SCIENCES	175	190	215	196	148	238	260	233	240	238	272	286	348	321	343	408	461
BIOMEDICAL SCIENCES	356	409	381	390	461	521	580	570	629	590	574	635	713	692	698	769	810
CHEMISTRY AND CHEMICAL ENGINEERING	792	771	900	893	1008	963	1065	981	1028	932	916	985	1017	929	916	946	1016
CIVIL ENGINEERING AND CONSTRUCTION	4	3	5	3	2	3	8	9	6	8	8	8	4	13	12	38	38
CLINICAL MEDICINE	491	449	494	565	595	634	667	748	834	837	896	860	1008	1018	998	1197	1160
COMPUTER SCIENCES	110	116	99	104	107	135	171	147	161	148	244	230	231	245	147	137	178
CREATIVE ARTS, CULTURE AND MUSIC	7	7	13	16	5	7	10	9	4	20	8	2	8	8	8	18	53
EARTH SCIENCES AND TECHNOLOGY	43	68	74	51	77	76	94	94	86	80	89	99	135	130	153	204	194
ECONOMICS AND BUSINESS	26	33	32	22	21	17	17	21	12	21	18	13	23	30	28	56	49
EDUCATIONAL SCIENCES	5	4	10	9	11	8	4	8	7	4	6	15	8	8	6	18	13
ELECTRICAL ENGINEERING AND TELECOMMUNICATION	65	71	51	52	62	83	83	68	64	88	95	87	86	72	77	99	140
ENERGY SCIENCE AND TECHNOLOGY	82	101	80	123	112	93	141	109	75	107	144	83	149	92	137	134	135

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	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
ENVIRONMENTAL SCIENCES AND TECHNOLOGY	62	68	68	92	64	75	113	72	105	134	117	120	152	175	143	229	250
GENERAL AND INDUSTRIAL ENGINEERING	17	17	19	15	8	21	9	20	28	20	32	22	41	27	33	51	48
HEALTH SCIENCES	18	14	29	18	20	12	13	24	30	17	27	22	28	37	73	45	49
HISTORY, PHILOSOPHY AND RELIGION	9	11	16	12	13	8	9	15	21	21	12	8	21	14	20	35	89
INFORMATION AND COMMUNICATION SCIENCES	8	11	15	14	6	6	9	8	10	13	10	7	10	18	11	14	23
INSTRUMENTS AND INSTRUMENTATION	47	81	54	80	63	50	91	63	68	81	85	61	101	68	81	68	97
LANGUAGE AND LINGUISTICS	7	6	11	6	6	10	4	5	6	9	6	8	9	10	8	29	44
LAW AND CRIMINOLOGY	4	0	6	5	2	5	7	6	8	6	5	1	9	4	6	8	8
LITERATURE	31	14	28	20	20	19	15	19	28	26	19	25	18	11	15	15	31
MANAGEMENT AND PLANNING	25	22	24	23	11	13	27	25	16	21	21	24	33	24	28	50	36
MATHEMATICS & STATISTICAL SCIENCES	219	253	271	239	229	305	314	303	354	295	351	291	348	325	316	389	453
MECHANICAL ENGINEERING AND AEROSPACE	14	22	17	28	28	23	14	23	49	25	32	36	27	44	55	45	53
MULTIDISCIPLINARY JOURNALS	34	33	23	27	32	43	30	35	32	31	34	49	34	37	54	39	60
PHYSICS AND MATERIALS SCIENCE	513	573	620	722	718	824	833	942	906	900	1083	882	1133	926	984	1031	942
POLITICAL SCIENCE AND PUBLIC ADMINISTRATION	23	19	22	13	17	11	6	13	14	14	15	15	11	20	16	34	22
PSYCHOLOGY	12	21	16	23	18	24	21	21	42	18	33	33	35	33	36	47	62
SOCIAL AND BEHAVIORAL SCIENCES, INTERDISCIPLINARY	12	11	6	17	10	12	15	6	4	19	15	9	10	14	9	8	14
SOCIOLOGY AND ANTHROPOLOGY	14	8	17	12	6	9	11	9	15	19	16	16	12	19	19	32	33

Annual output numbers for the Netherlands across fields, 1993-2009.

	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
AGRICULTURE AND FOOD SCIENCE	648	657	710	715	781	826	725	807	696	707	861	763	907	860	943	1025	1085
ASTRONOMY AND ASTROPHYSICS	280	387	414	467	460	456	512	560	559	579	627	585	666	687	628	637	714
BASIC LIFE SCIENCES	2293	2437	2739	2646	2783	2839	2850	2634	2647	2735	2698	2730	3030	2977	3099	3517	3360
BASIC MEDICAL SCIENCES	193	254	253	262	268	298	283	301	274	282	347	340	389	376	382	467	511
BIOLOGICAL SCIENCES	1088	1126	1237	1168	1197	1209	1168	1089	1133	1199	1285	1149	1433	1337	1445	1548	1625
BIOMEDICAL SCIENCES	2372	2424	2574	2633	2805	2923	2829	2840	2908	2986	3243	3093	3616	3592	3575	4158	4153
CHEMISTRY AND CHEMICAL ENGINEERING	1788	1865	1838	2056	2047	2073	2128	1962	2197	2035	2177	2087	2395	2302	2065	2192	2524
CIVIL ENGINEERING AND CONSTRUCTION	55	58	64	57	75	88	93	85	83	130	112	107	127	160	149	193	220
CLINICAL MEDICINE	4826	5089	5512	5519	6057	6067	6190	6270	6421	6433	7237	7080	8555	8568	9047	10419	10754
COMPUTER SCIENCES	572	483	437	524	492	581	621	653	658	618	1091	1094	1110	1220	642	707	806
CREATIVE ARTS, CULTURE AND MUSIC	50	58	62	67	71	71	94	72	68	58	60	59	90	58	80	94	111
EARTH SCIENCES AND TECHNOLOGY	497	501	535	574	647	676	747	848	754	761	904	817	944	980	1022	1145	1274
ECONOMICS AND BUSINESS	245	243	264	285	349	370	317	371	401	415	455	445	538	551	612	823	893
EDUCATIONAL SCIENCES	89	74	105	93	109	97	137	123	129	165	150	159	222	222	212	307	364
ELECTRICAL ENGINEERING AND TELECOMMUNICATION	373	532	461	411	452	440	463	528	529	544	564	533	636	618	626	776	847
ENERGY SCIENCE AND TECHNOLOGY	244	290	274	309	268	302	257	324	246	265	304	278	277	353	320	361	394

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	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
ENVIRONMENTAL SCIENCES AND TECHNOLOGY	599	627	701	765	733	908	913	827	880	1007	1054	993	1272	1283	1468	1588	1810
GENERAL AND INDUSTRIAL ENGINEERING	102	106	139	162	163	176	135	177	162	161	190	166	219	237	206	304	313
HEALTH SCIENCES	197	227	250	279	335	403	400	454	458	429	557	570	722	794	870	997	1223
HISTORY, PHILOSOPHY AND RELIGION	88	111	140	117	112	132	161	176	171	168	151	208	199	221	232	261	368
INFORMATION AND COMMUNICATION SCIENCES	41	48	55	48	59	63	63	80	78	67	75	83	88	88	124	194	192
INSTRUMENTS AND INSTRUMENTATION	195	234	212	229	243	245	256	230	209	224	228	211	199	227	170	217	246
LANGUAGE AND LINGUISTICS	56	72	71	65	71	76	59	82	68	76	65	86	85	106	99	164	166
LAW AND CRIMINOLOGY	36	24	31	44	34	43	49	48	69	38	44	52	81	82	85	122	144
LITERATURE	45	41	47	46	69	56	50	51	43	36	27	76	66	53	39	47	69
MANAGEMENT AND PLANNING	136	155	211	233	259	280	266	331	299	320	371	341	384	426	424	511	663
MATHEMATICS & STATISTICAL SCIENCES	453	439	476	530	552	538	498	546	534	537	648	502	616	615	591	683	800
MECHANICAL ENGINEERING AND AEROSPACE	211	198	251	323	250	291	246	301	300	290	283	279	322	392	365	435	430
MULTIDISCIPLINARY JOURNALS	191	151	162	165	149	234	181	191	166	169	163	172	237	220	247	243	282
PHYSICS AND MATERIALS SCIENCE	1964	2226	2288	2378	2287	2490	2363	2468	2635	2591	2627	2720	2982	2819	2720	2980	3082
POLITICAL SCIENCE AND PUBLIC ADMINISTRATION	52	64	50	65	51	71	64	66	81	74	90	77	106	126	147	186	177
PSYCHOLOGY	381	434	510	542	569	608	615	611	656	677	816	750	877	1019	1124	1431	1450
SOCIAL AND BEHAVIORAL SCIENCES, INTERDISCIPLINARY	130	155	166	169	218	197	175	212	200	199	247	257	307	335	343	388	418
SOCIOLOGY AND ANTHROPOLOGY	104	94	109	139	111	123	139	124	111	136	145	127	147	157	197	252	285

Annual output numbers for Slovenia across fields, 1993-2009.

	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
AGRICULTURE AND FOOD SCIENCE	3	6	16	16	27	17	35	36	32	41	49	42	55	61	75	107	108
ASTRONOMY AND ASTROPHYSICS	5	6	4	8	7	8	3	8	13	11	20	26	37	39	45	55	41
BASIC LIFE SCIENCES	79	86	95	80	124	119	156	144	178	193	200	190	211	218	259	295	302
BASIC MEDICAL SCIENCES	11	3	5	11	18	27	23	28	44	36	44	42	43	34	52	64	49
BIOLOGICAL SCIENCES	27	29	21	33	62	69	59	78	67	56	91	85	117	92	141	156	179
BIOMEDICAL SCIENCES	72	52	45	54	60	73	90	254	144	133	151	123	169	179	184	256	230
CHEMISTRY AND CHEMICAL ENGINEERING	158	146	191	197	242	206	303	298	334	333	378	365	438	386	480	563	563
CIVIL ENGINEERING AND CONSTRUCTION	4	11	4	6	6	9	5	2	13	7	19	16	14	26	26	33	33
CLINICAL MEDICINE	74	112	123	123	164	145	184	248	241	262	289	263	324	315	298	527	629
COMPUTER SCIENCES	39	44	52	50	66	67	66	96	105	74	142	133	154	139	118	130	125
CREATIVE ARTS, CULTURE AND MUSIC	6	1	2	3	3	5	1	5	0	5	2	6	7	1	5	23	16
EARTH SCIENCES AND TECHNOLOGY	11	7	7	9	23	15	27	20	29	31	36	42	56	57	69	116	114
ECONOMICS AND BUSINESS	2	3	5	8	4	7	7	14	20	8	18	17	19	21	39	57	60
EDUCATIONAL SCIENCES	1	0	1	1	3	6	6	3	10	4	12	9	22	13	9	62	64
ELECTRICAL ENGINEERING AND TELECOMMUNICATION	28	30	40	49	57	56	46	82	83	67	124	112	90	88	78	133	151
ENERGY SCIENCE AND TECHNOLOGY	33	33	30	31	24	36	48	50	54	58	58	52	61	70	86	92	78

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	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
ENVIRONMENTAL SCIENCES AND TECHNOLOGY	25	26	36	27	43	29	48	51	47	57	56	69	75	119	113	238	167
GENERAL AND INDUSTRIAL ENGINEERING	5	15	13	18	21	25	20	19	39	41	46	46	98	59	53	63	71
HEALTH SCIENCES	3	2	3	7	9	11	7	16	20	9	15	15	30	20	42	45	36
HISTORY, PHILOSOPHY AND RELIGION	9	9	10	5	4	6	10	8	14	6	2	1	12	8	13	79	87
INFORMATION AND COMMUNICATION SCIENCES	0	1	3	10	8	6	10	8	9	12	9	14	12	13	16	23	18
INSTRUMENTS AND INSTRUMENTATION	12	12	29	25	16	16	37	34	48	45	57	49	61	46	66	66	57
LANGUAGE AND LINGUISTICS	1	0	1	1	0	0	0	0	0	3	2	1	2	2	2	46	43
LAW AND CRIMINOLOGY	1	0	1	2	1	1	11	7	4	2	3	2	14	2	4	8	35
LITERATURE	0	0	1	2	2	2	2	1	1	2	2	5	11	17	22	16	17
MANAGEMENT AND PLANNING	5	5	4	9	9	4	6	6	7	14	12	9	16	13	24	27	35
MATHEMATICS & STATISTICAL SCIENCES	56	66	46	66	64	86	76	122	94	139	104	124	161	128	192	202	217
MECHANICAL ENGINEERING AND AEROSPACE	19	21	9	20	18	22	11	57	28	41	28	37	39	49	48	51	50
MULTIDISCIPLINARY JOURNALS	3	10	2	3	1	2	2	6	5	2	14	4	9	6	12	6	24
PHYSICS AND MATERIALS SCIENCE	203	208	322	311	338	334	418	442	525	508	597	527	650	611	660	778	739
POLITICAL SCIENCE AND PUBLIC ADMINISTRATION	4	5	5	2	0	4	2	5	1	7	4	5	2	3	6	6	27
PSYCHOLOGY	1	10	4	3	3	11	5	11	7	10	10	17	11	15	15	16	22
SOCIAL AND BEHAVIORAL SCIENCES, INTERDISCIPLINARY	1	3	4	3	2	1	2	5	4	3	8	4	5	5	12	48	16
SOCIOLOGY AND ANTHROPOLOGY	3	6	2	2	4	5	9	7	19	13	17	16	23	14	32	44	27

Annual output numbers for Sweden across fields, 1993-2009.

	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
AGRICULTURE AND FOOD SCIENCE	311	310	372	382	346	427	424	493	393	473	522	436	526	499	518	604	568
ASTRONOMY AND ASTROPHYSICS	114	119	154	195	198	197	175	197	221	273	263	264	281	301	240	339	348
BASIC LIFE SCIENCES	1707	1892	2022	2021	2183	2324	2328	2198	2397	2314	2520	2337	2526	2500	2470	2589	2586
BASIC MEDICAL SCIENCES	159	145	181	170	199	234	208	184	192	205	257	185	230	252	256	310	320
BIOLOGICAL SCIENCES	722	766	776	792	744	861	882	890	947	978	1091	894	1109	1051	1200	1167	1278
BIOMEDICAL SCIENCES	2187	2230	2346	2447	2458	2612	2614	2401	2434	2281	2443	2262	2461	2339	2404	2596	2545
CHEMISTRY AND CHEMICAL ENGINEERING	1308	1331	1422	1591	1565	1698	1683	1651	1770	1799	1801	1820	2030	1965	1845	1911	1981
CIVIL ENGINEERING AND CONSTRUCTION	36	48	50	47	64	88	91	77	61	74	93	83	93	106	137	112	138
CLINICAL MEDICINE	3968	4191	4386	4704	4862	4859	5009	4840	5016	4740	5109	4661	5655	5224	5485	5998	6077
COMPUTER SCIENCES	245	195	184	231	210	281	375	342	338	338	595	536	541	563	334	337	360
CREATIVE ARTS, CULTURE AND MUSIC	21	41	12	15	18	31	27	21	28	30	29	36	27	31	32	47	55
EARTH SCIENCES AND TECHNOLOGY	303	343	409	565	413	474	517	564	637	546	659	567	724	689	689	863	833
ECONOMICS AND BUSINESS	94	103	96	119	131	144	167	177	164	179	211	178	240	225	255	350	374
EDUCATIONAL SCIENCES	29	31	14	30	32	23	25	30	30	38	49	38	62	66	56	136	161
ELECTRICAL ENGINEERING AND TELECOMMUNICATION	246	322	336	332	334	391	472	402	495	435	449	437	493	507	585	595	686
ENERGY SCIENCE AND TECHNOLOGY	191	218	223	221	232	234	273	255	303	314	312	316	349	379	340	365	393

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	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
ENVIRONMENTAL SCIENCES AND TECHNOLOGY	547	621	692	787	694	823	940	942	949	981	1073	1047	1258	1253	1266	1393	1407
GENERAL AND INDUSTRIAL ENGINEERING	90	108	98	132	133	141	128	135	162	152	167	188	176	230	190	231	201
HEALTH SCIENCES	208	261	329	357	372	434	459	463	545	490	571	528	612	658	747	834	904
HISTORY, PHILOSOPHY AND RELIGION	35	37	38	34	40	41	37	60	43	47	56	48	60	66	94	151	157
INFORMATION AND COMMUNICATION SCIENCES	12	12	11	12	14	14	13	19	27	17	27	25	30	27	20	59	49
INSTRUMENTS AND INSTRUMENTATION	121	150	174	144	190	131	180	151	200	183	168	172	156	168	202	174	153
LANGUAGE AND LINGUISTICS	18	18	23	16	16	19	22	33	32	23	22	36	26	29	28	38	67
LAW AND CRIMINOLOGY	18	13	25	19	20	30	27	37	25	31	39	25	40	29	38	62	48
LITERATURE	25	13	25	24	24	24	26	37	42	30	24	35	26	25	23	23	19
MANAGEMENT AND PLANNING	57	63	79	110	94	102	105	107	106	122	138	159	115	157	154	200	249
MATHEMATICS & STATISTICAL SCIENCES	217	215	276	274	302	363	374	322	327	362	381	397	427	481	447	501	509
MECHANICAL ENGINEERING AND AEROSPACE	128	137	140	173	151	180	183	179	191	205	205	207	230	255	255	238	258
MULTIDISCIPLINARY JOURNALS	131	131	154	142	125	161	170	155	138	172	167	148	210	178	211	177	265
PHYSICS AND MATERIALS SCIENCE	1614	1780	2012	2010	2177	2360	2328	2440	2791	2690	2581	2590	2857	2671	2677	2786	2865
POLITICAL SCIENCE AND PUBLIC ADMINISTRATION	35	41	25	30	30	26	31	32	40	34	45	43	65	58	58	101	105
PSYCHOLOGY	151	133	154	194	204	228	200	227	233	241	268	245	294	300	363	372	342
SOCIAL AND BEHAVIORAL SCIENCES, INTERDISCIPLINARY	66	51	63	82	74	96	81	84	98	98	112	104	124	156	123	177	158
SOCIOLOGY AND ANTHROPOLOGY	55	57	56	47	55	39	77	57	60	73	83	81	94	83	109	154	145

Appendix F Annual output numbers for the Czech Republic per scientific cooperation type, 1993-2009.

	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
National cooperation	1	422	474	621	706	746	764	864	970	1067	1395	1296	1575	1666	1852	2422	2492
International cooperation	3	1253	1403	1639	1640	1870	1922	1958	2161	2213	2494	2501	3026	3031	3298	3829	4041

For 1993, publications from the Czech Republic were still processed under the former name of the combined republic Czechoslovakia

Appendix G Annual output numbers for the Czech Republic's national cooperation output across fields, 1993-2009.

	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
AGRICULTURE AND FOOD SCIENCE	0	7	12	14	17	21	35	51	38	50	65	49	69	77	93	185	175
ASTRONOMY AND ASTROPHYSICS	0	3	4	4	4	2	4	5	5	3	3	1	9	12	6	16	12
BASIC LIFE SCIENCES	0	58	69	86	104	88	101	137	131	167	188	197	204	223	231	304	308
BASIC MEDICAL SCIENCES	0	8	9	12	18	11	8	22	16	21	25	15	28	34	35	40	37
BIOLOGICAL SCIENCES	0	36	36	58	66	54	75	84	86	99	130	123	171	172	204	245	241
BIOMEDICAL SCIENCES	0	55	60	80	130	106	108	121	163	159	236	193	272	237	310	437	416
CHEMISTRY AND CHEMICAL ENGINEERING	0	127	138	194	181	235	200	207	265	271	318	327	307	417	421	457	478
CIVIL ENGINEERING AND CONSTRUCTION	0	1	0	3	2	1	3	1	2	5	8	5	4	6	6	11	19
CLINICAL MEDICINE	0	82	87	121	155	151	162	207	233	225	364	295	401	397	486	698	573
COMPUTER SCIENCES	0	4	8	7	14	16	14	21	20	20	45	54	57	52	29	35	31
CREATIVE ARTS, CULTURE AND MUSIC	0	0	0	0	1	0	0	2	0	0	0	0	0	1	0	0	3
EARTH SCIENCES AND TECHNOLOGY	0	5	9	13	14	24	12	19	18	30	36	31	33	45	36	100	129
ECONOMICS AND BUSINESS	0	1	3	1	6	2	22	19	24	30	14	19	14	14	15	31	40
EDUCATIONAL SCIENCES	0	0	0	0	0	0	0	0	0	1	2	0	2	0	2	1	2
ELECTRICAL ENGINEERING AND TELECOMMUNICATION	0	7	1	4	4	3	3	7	10	5	7	12	10	12	21	42	28
ENERGY SCIENCE AND TECHNOLOGY	0	9	9	11	15	20	24	9	14	17	18	16	15	57	24	81	52

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	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
ENVIRONMENTAL SCIENCES AND TECHNOLOGY	0	12	12	19	27	15	26	24	30	40	62	64	71	91	101	121	152
GENERAL AND INDUSTRIAL ENGINEERING	0	0	1	5	2	0	1	0	1	7	2	1	6	5	3	9	8
HEALTH SCIENCES	0	1	6	2	8	5	1	4	1	0	3	1	5	10	7	11	7
HISTORY, PHILOSOPHY AND RELIGION	0	1	0	2	1	1	3	0	0	0	1	2	8	7	5	8	11
INFORMATION AND COMMUNICATION SCIENCES	0	1	2	0	0	0	0	0	0	0	1	0	1	1	0	0	0
INSTRUMENTS AND INSTRUMENTATION	0	5	2	2	7	10	5	8	8	10	13	9	13	18	27	32	31
LANGUAGE AND LINGUISTICS	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0
LAW AND CRIMINOLOGY	0	0	0	0	0	1	0	2	1	1	0	1	0	2	3	1	0
LITERATURE	0	0	0	0	0	4	2	0	0	0	0	0	0	0	4	1	3
MANAGEMENT AND PLANNING	0	0	0	1	1	1	0	1	0	2	0	0	1	2	3	3	12
MATHEMATICS & STATISTICAL SCIENCES	0	7	8	12	17	7	19	18	16	20	29	30	34	36	40	61	59
MECHANICAL ENGINEERING AND AEROSPACE	0	7	4	7	7	2	7	4	3	3	5	7	12	13	12	18	14
MULTIDISCIPLINARY JOURNALS	0	1	2	2	3	3	1	4	0	5	0	1	3	2	8	10	9
PHYSICS AND MATERIALS SCIENCE	1	79	102	113	131	128	146	126	153	187	209	196	248	241	280	287	356
POLITICAL SCIENCE AND PUBLIC ADMINISTRATION	0	0	2	1	5	2	4	4	10	4	7	7	5	7	7	7	12
PSYCHOLOGY	0	8	13	11	13	13	8	8	7	12	10	6	12	17	24	21	17
SOCIAL AND BEHAVIORAL SCIENCES, INTERDISCIPLINARY	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1
SOCIOLOGY AND ANTHROPOLOGY	0	0	2	3	2	1	4	0	0	4	2	5	3	3	9	9	6

For 1993, publications from the Czech Republic were still processed under the former name of the combined republic Czechoslovakia

Appendix H Annual output numbers for the Czech Republic's international cooperation output across fields, 1993-2009.

	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
AGRICULTURE AND FOOD SCIENCE	0	18	16	18	19	35	30	46	33	52	52	70	70	73	65	90	105
ASTRONOMY AND ASTROPHYSICS	0	27	57	51	61	60	60	65	71	62	79	90	110	139	120	156	132
BASIC LIFE SCIENCES	0	186	180	223	263	248	245	266	309	274	345	325	397	350	422	469	448
BASIC MEDICAL SCIENCES	0	10	11	20	16	16	17	14	14	23	25	19	26	41	39	40	44
BIOLOGICAL SCIENCES	0	94	98	124	131	98	135	138	149	144	182	214	215	260	306	360	393
BIOMEDICAL SCIENCES	0	116	117	161	135	184	169	154	182	179	187	208	220	244	309	341	307
CHEMISTRY AND CHEMICAL ENGINEERING	0	327	328	421	375	451	397	400	425	460	474	493	596	561	644	676	794
CIVIL ENGINEERING AND CONSTRUCTION	0	5	8	4	2	5	5	7	3	4	1	5	7	11	9	13	14
CLINICAL MEDICINE	1	110	136	154	152	200	188	197	259	275	315	288	376	401	483	590	572
COMPUTER SCIENCES	0	26	29	35	36	43	42	40	53	52	117	99	107	112	84	113	99
CREATIVE ARTS, CULTURE AND MUSIC	0	0	0	0	0	0	0	0	0	0	0	1	0	1	4	1	3
EARTH SCIENCES AND TECHNOLOGY	0	42	66	67	81	81	94	83	95	80	133	121	136	174	138	195	197
ECONOMICS AND BUSINESS	0	3	4	5	8	5	11	15	12	16	16	18	15	10	14	26	32
EDUCATIONAL SCIENCES	0	1	0	1	0	0	0	1	1	5	1	2	1	0	1	7	1
ELECTRICAL ENGINEERING AND TELECOMMUNICATION	0	49	25	26	22	34	34	33	37	37	35	59	53	46	30	80	70
ENERGY SCIENCE AND TECHNOLOGY	0	37	39	45	37	46	49	49	51	65	63	75	82	72	73	89	106

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	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
ENVIRONMENTAL SCIENCES AND TECHNOLOGY	0	22	37	41	51	50	50	55	63	84	81	96	115	143	150	181	218
GENERAL AND INDUSTRIAL ENGINEERING	0	2	2	2	5	7	2	4	6	3	10	3	17	9	20	21	29
HEALTH SCIENCES	0	2	2	4	10	3	9	8	5	4	9	5	9	8	15	16	19
HISTORY, PHILOSOPHY AND RELIGION	0	3	1	2	1	2	0	0	1	2	1	1	0	2	4	5	5
INFORMATION AND COMMUNICATION SCIENCES	0	0	0	1	0	0	0	1	0	0	2	2	0	0	4	5	1
INSTRUMENTS AND INSTRUMENTATION	0	24	27	34	34	46	45	35	44	46	48	58	62	48	53	63	82
LANGUAGE AND LINGUISTICS	0	0	0	1	0	0	0	1	0	0	0	0	1	0	0	1	1
LAW AND CRIMINOLOGY	0	1	2	0	0	3	2	2	1	2	0	2	0	1	0	6	0
LITERATURE	0	0	1	0	0	0	0	0	0	0	0	0	0	0	2	1	0
MANAGEMENT AND PLANNING	0	3	5	1	2	2	6	4	11	3	4	5	7	6	5	8	14
MATHEMATICS & STATISTICAL SCIENCES	0	62	98	81	86	92	103	118	127	125	131	127	158	169	194	245	279
MECHANICAL ENGINEERING AND AEROSPACE	0	13	9	19	18	19	19	17	20	13	23	18	28	41	30	43	41
MULTIDISCIPLINARY JOURNALS	0	4	5	9	20	3	17	7	19	14	14	18	20	28	24	21	47
PHYSICS AND MATERIALS SCIENCE	2	416	475	544	531	676	746	723	767	841	819	786	1003	925	995	1078	1142
POLITICAL SCIENCE AND PUBLIC ADMINISTRATION	0	3	2	5	5	1	1	3	4	3	1	6	2	4	2	6	2
PSYCHOLOGY	0	7	8	6	12	13	9	9	10	3	10	12	5	7	13	15	12
SOCIAL AND BEHAVIORAL SCIENCES, INTERDISCIPLINARY	0	3	0	3	2	2	2	0	4	1	4	4	2	3	2	4	4
SOCIOLOGY AND ANTHROPOLOGY	0	3	1	5	6	4	7	7	10	7	3	5	0	10	8	10	9

For 1993, publications from the Czech Republic were still processed under the former name of the combined republic Czechoslovakia