

Indicadores científicos de España según datos ISI. Proyecto de Observatorio FECYT de política científica. Informe de situación

UPC, Barcelona – Octubre 2005

**Félix de Moya Anegón – Grupo SCIMAGO
Universidad de Granada**

Grupo SCIMAGO

- Investigadores de cinco universidades
 - UAH, UC3M, UEX, UOC y UGR
- Análisis y evaluación de dominios científicos
 - Informes específicos
 - Sistema de Información Atlas de la ciencia
 - scimago.ugr.es www.atlasofscience.net
 - Interfaces gráficos para el acceso a la información científica
 - Herramientas para la evaluación de la investigación en dominios institucionales, grupales o individuales

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- Funding
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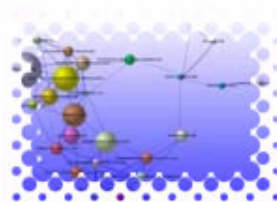
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- SCImago Intranet

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New Website of SCImago

by [Administrator SCImago](#) - sábado, 5 febrero 2005, 12:51

We are proud to publish our new Website of SCImago. We implemented an Intranet Section which allows collaborative work online within our Research Group. If you have any Questions feel free to contact me.

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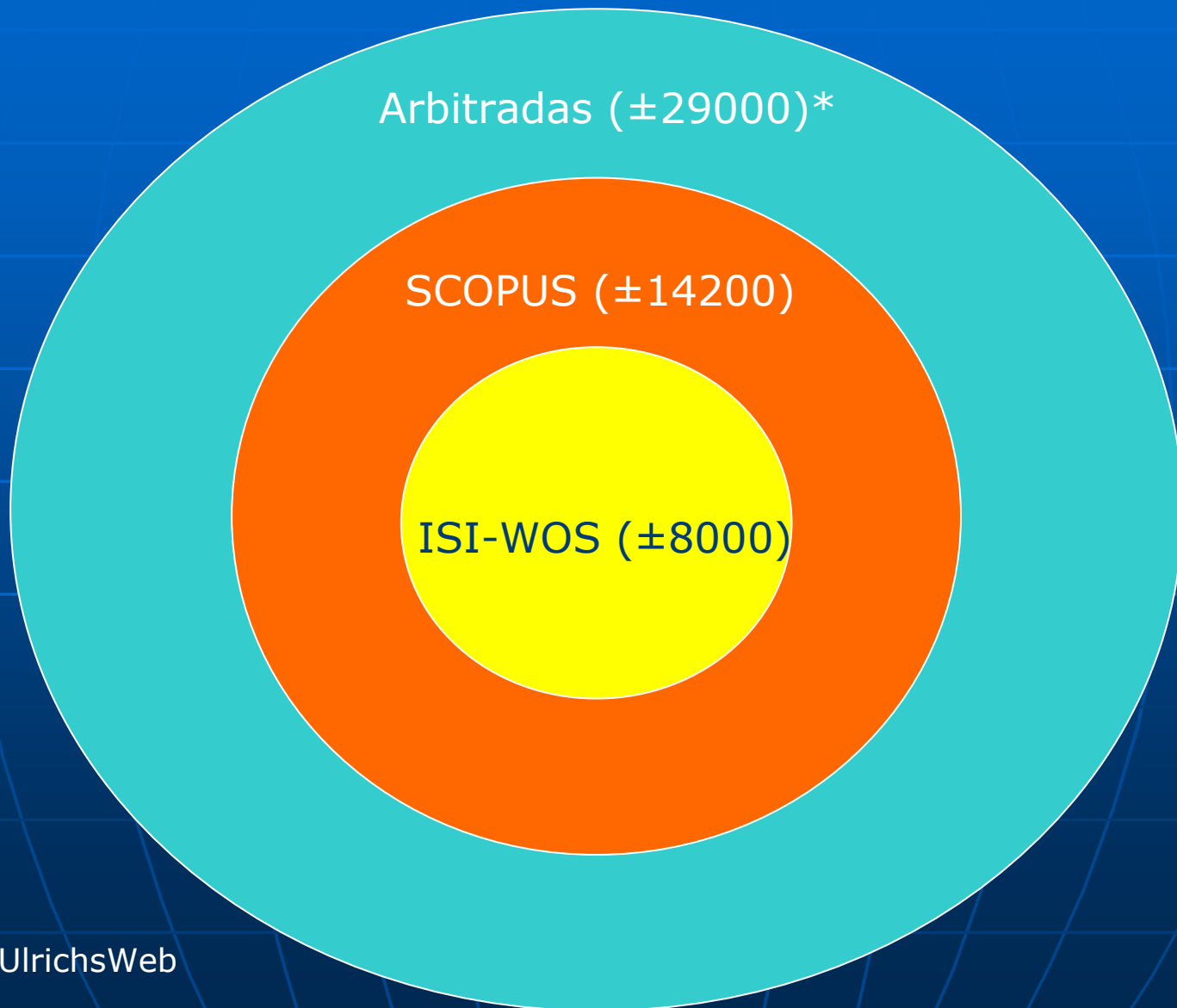
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Revistas en el mundo

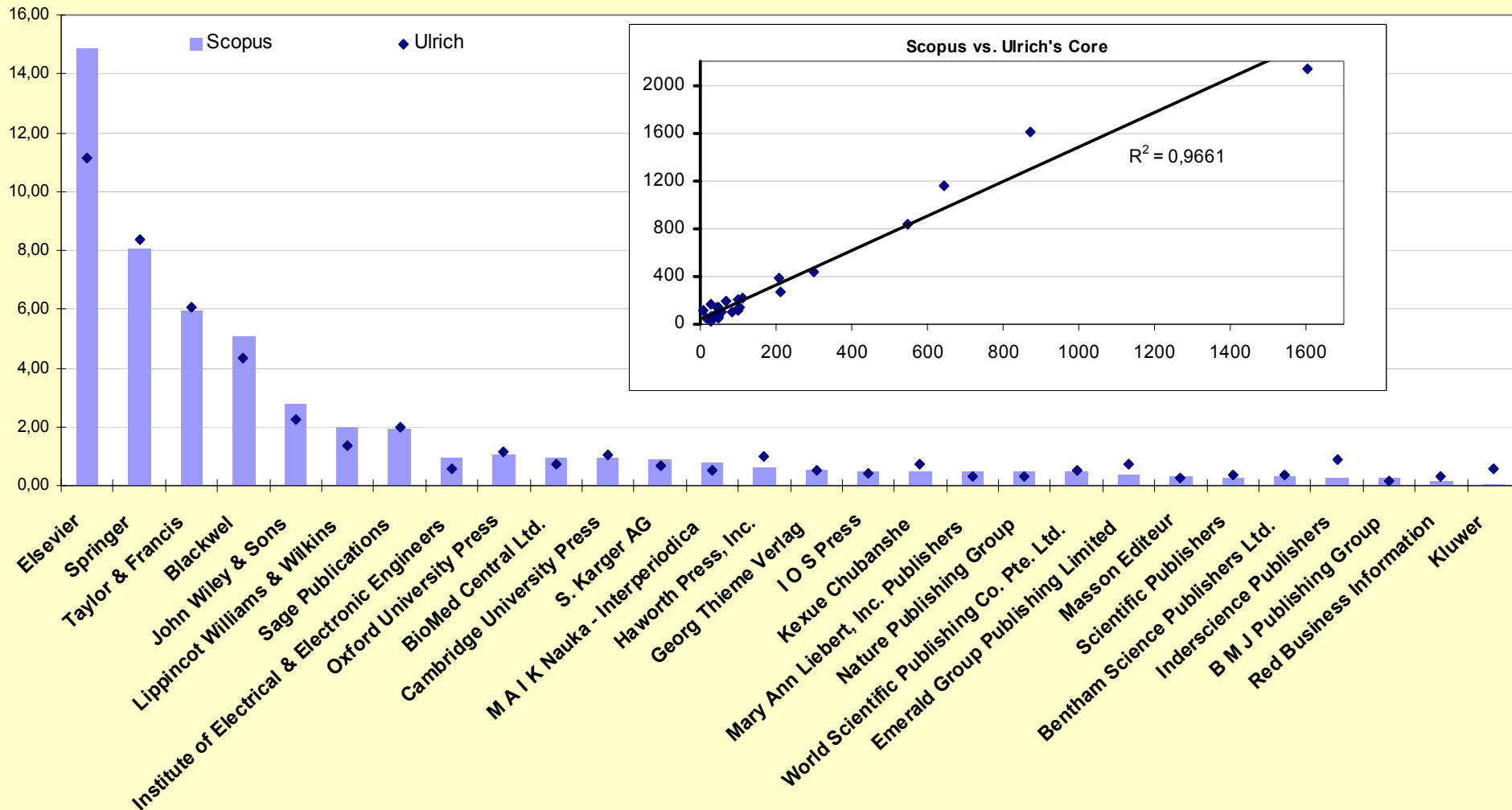


(*) Fuente UlrichsWeb

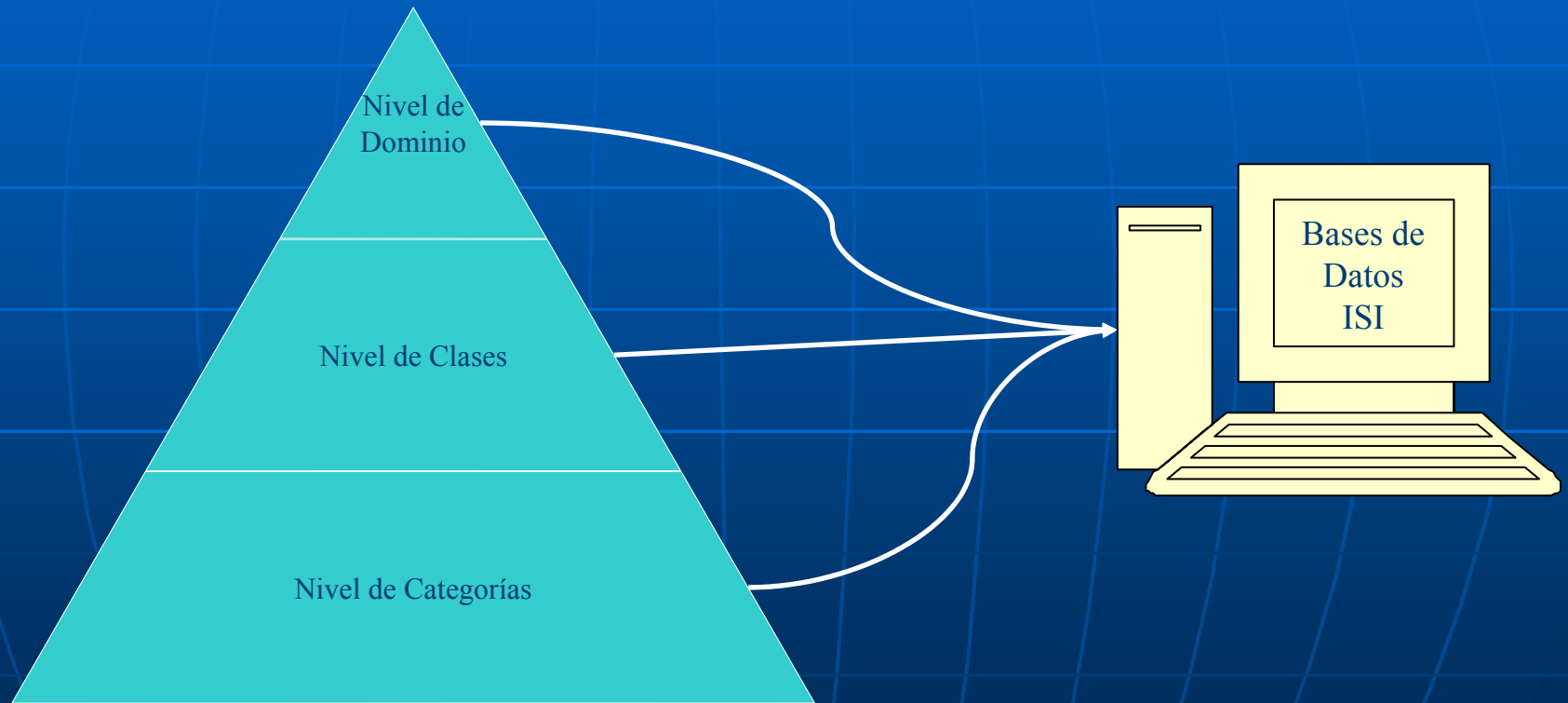
Características

- Cobertura
 - Global frente a Bradford
- Generación de Indicadores
 - Representaciones complementarias
- Flexibilidad en la definición de dominios
- Sistema de ayuda a la toma de decisiones

Cobertura SCOPUS/ULRICHS

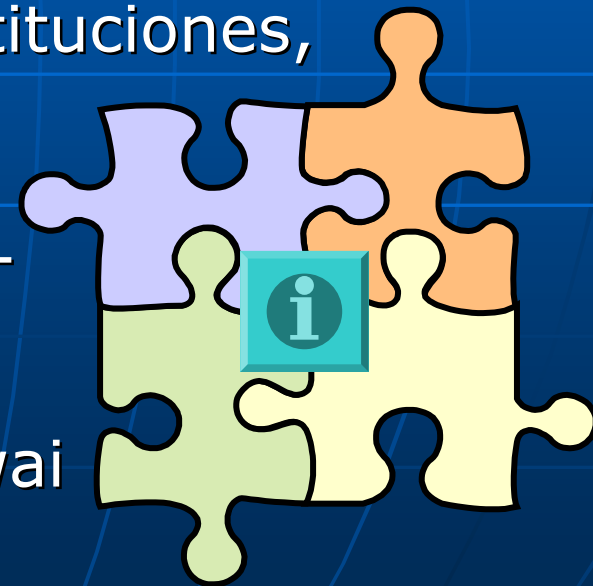


Estructura del Sistema

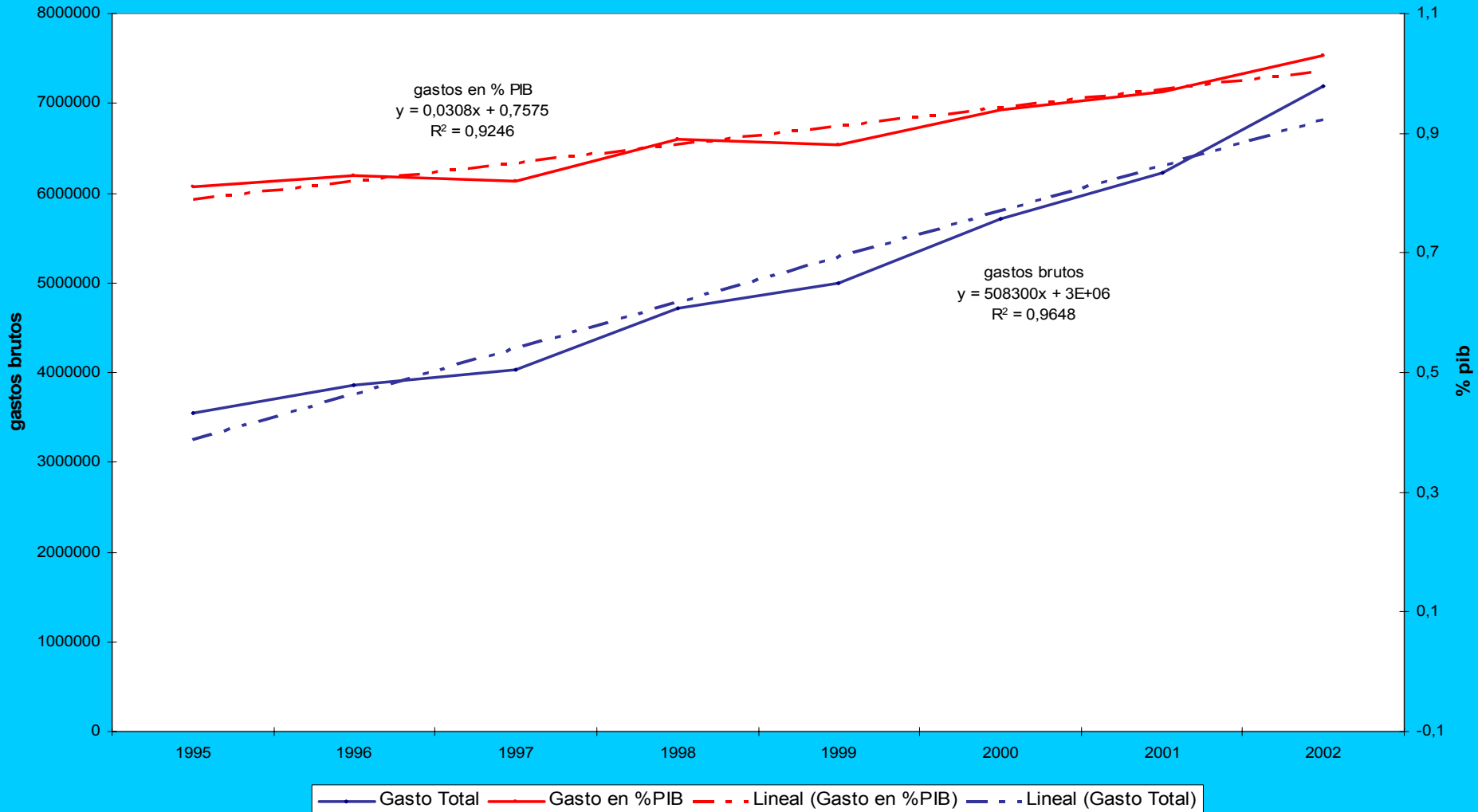


Mapas

- Fuente: ISI-WOS
 - Alternativa SCOPUS
- Unidades de Medida: Cocitación y colaboración
 - Trabajos, Autores, Revistas, Instituciones, Categorías
- Generación de Matrices:
 - Algoritmos de poda: MST, PFNET
- Layout:
 - Spring Embedding: Kamada Kawai

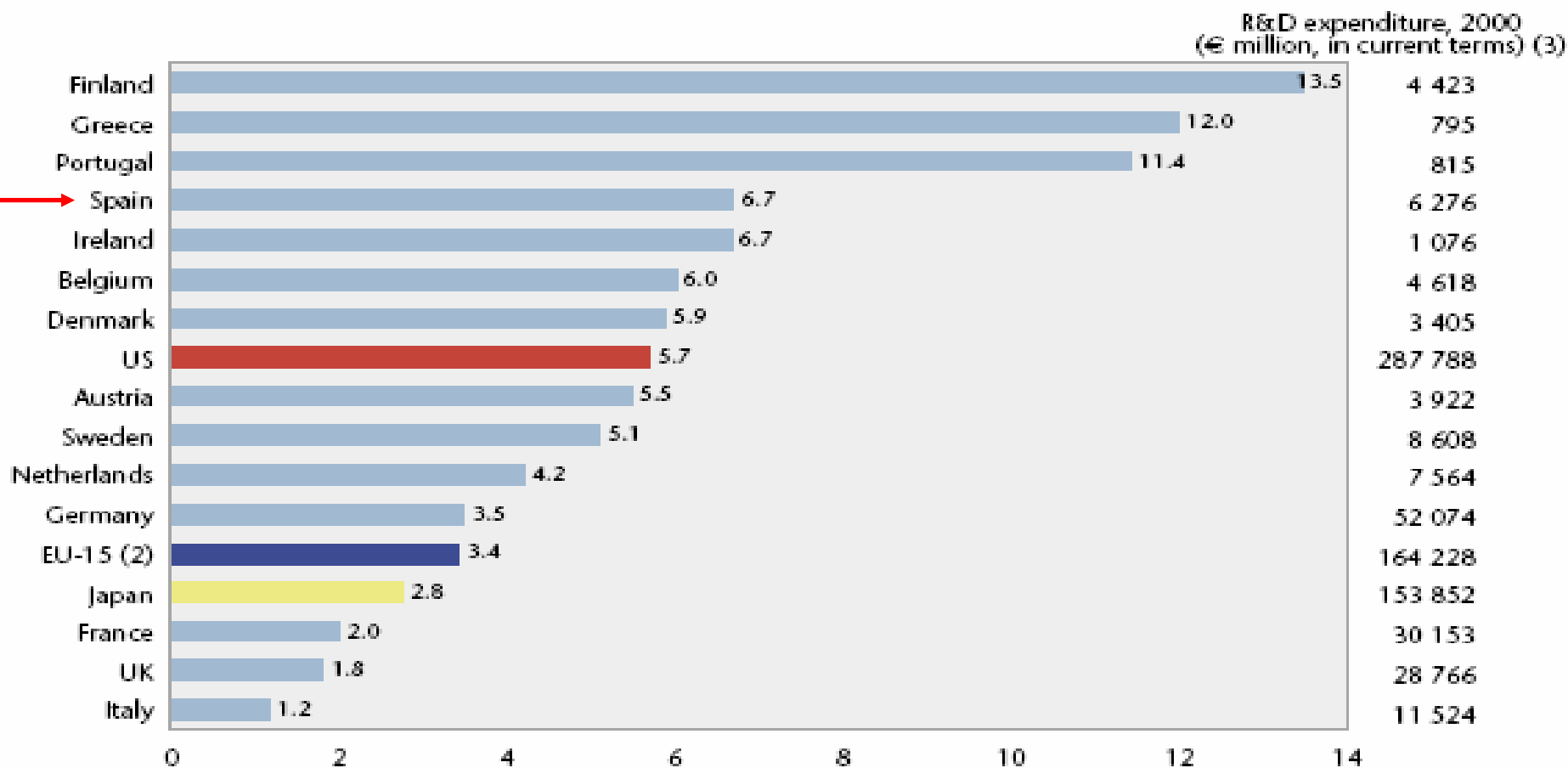


Evolución del gasto en I+D (España)



Crecimiento del gasto en I+D por países desde 1995

Figure 2.1.4 R&D expenditure – average annual real growth (%), 1995 to latest available year (1)



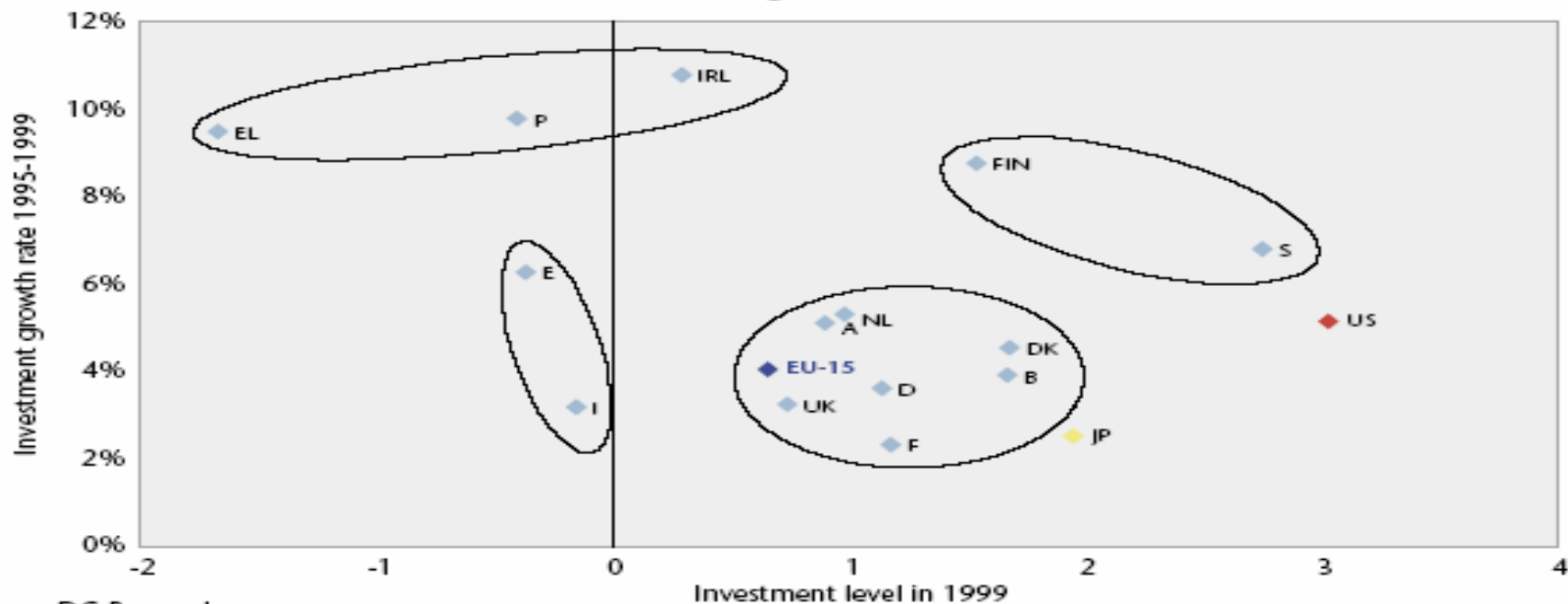
Source: DG Research

Data: OECD – MSTI database (STI, EAS Division) with DG Research provisional estimates

Notes: (1) FIN, UK, US, EU-15: 1995–2000; JP: 1996–2000; D, E, A: 1995–2001; I: 1997–1999; F: 1997–2000; all other countries: 1995–1999. (2) L data are not included in EU-15 average. (3) B, DK, EL, IRL, I, NL, P, S: 1999; D, E, A: 2001.

Países por inversiones en SC (EU-15)

Figure 1.13 Provisional composite indicator of investment in the knowledge-based economy for comparison between the EU-15, Japan and US. Relative country positions in 1999 and annual growth rate 1995-1999



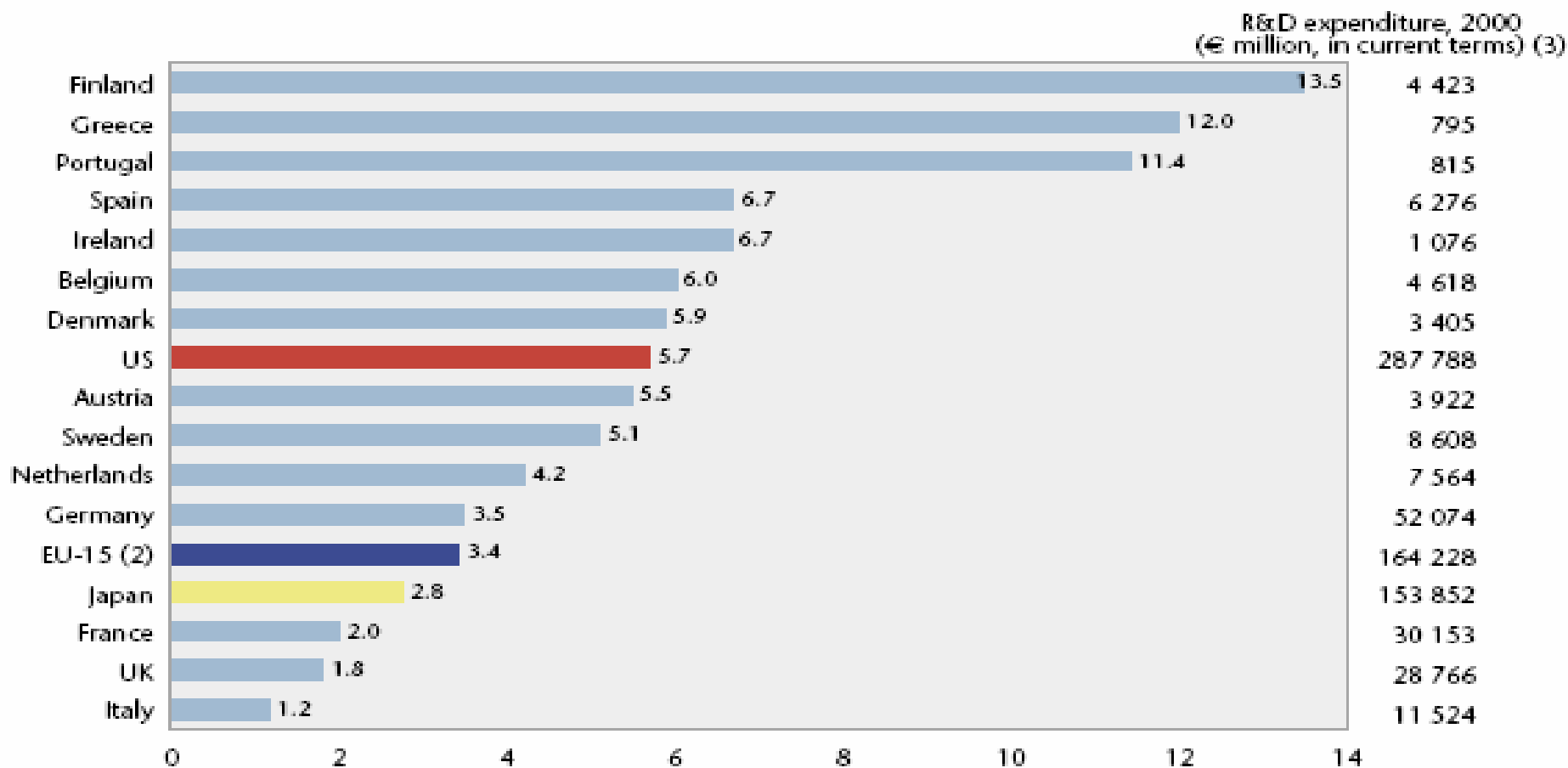
Source: DG Research

Data: Eurostat

Note: Only 4 sub-indicators were included for both the investment level in 1999 (horizontal axis) and the growth rates: R&D expenditure (GERD per capita), PhDs (number of new S&T PhDs per capita), Researchers (number of researchers per capita) and gross fixed capital formation (GFCF (excluding building) per capita). The three other sub-indicators (e-government, educational spending and life-long-learning) are not available for the US and JP. L is not included (no data for most of indicators). For more details about the calculations and methodology, see the methodological annex to Chapter 1.

Crecimiento medio anual del gasto en I+D por países

Figure 2.1.4 R&D expenditure – average annual real growth (%), 1995 to latest available year (1)

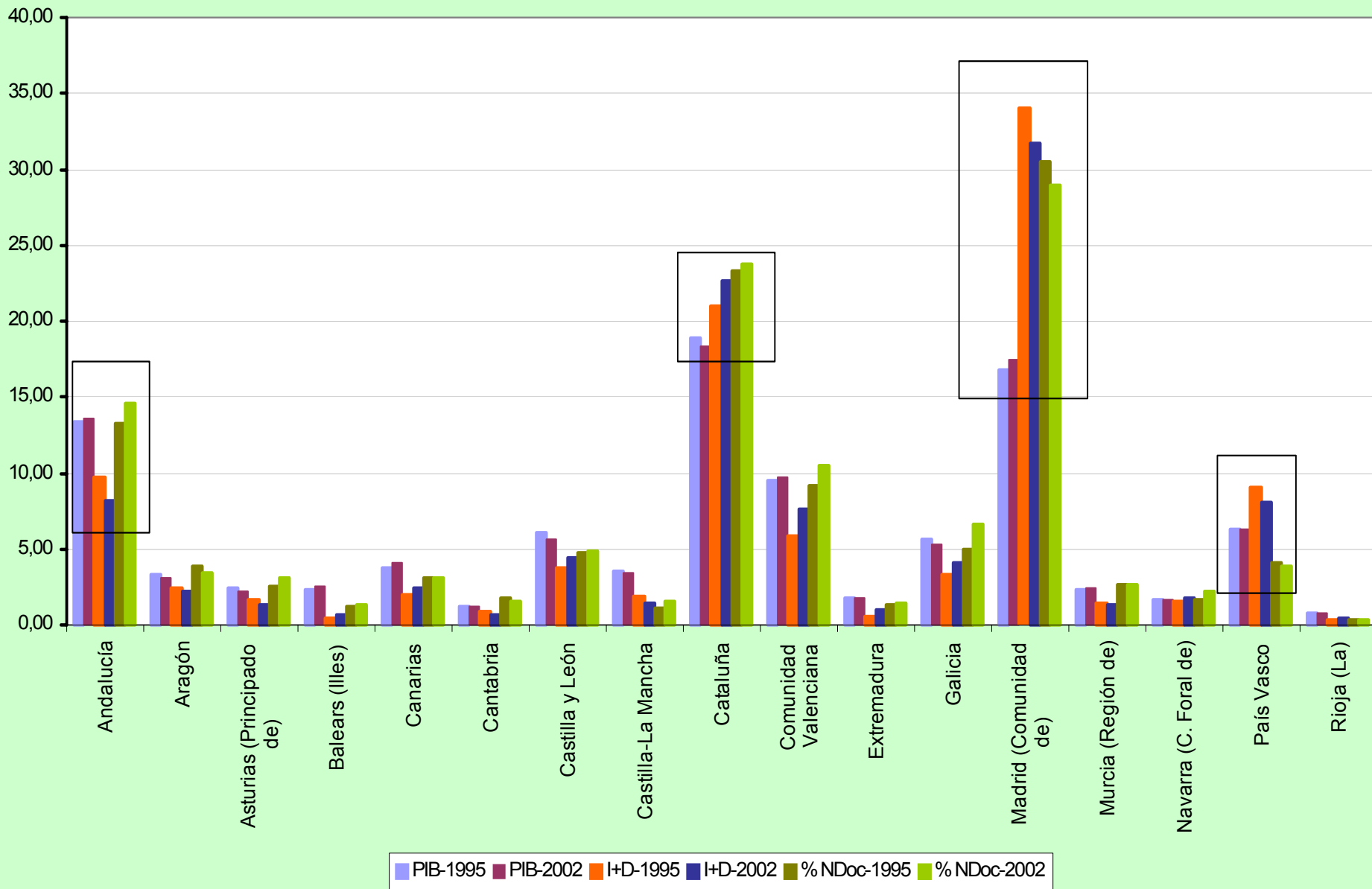


Source: DG Research

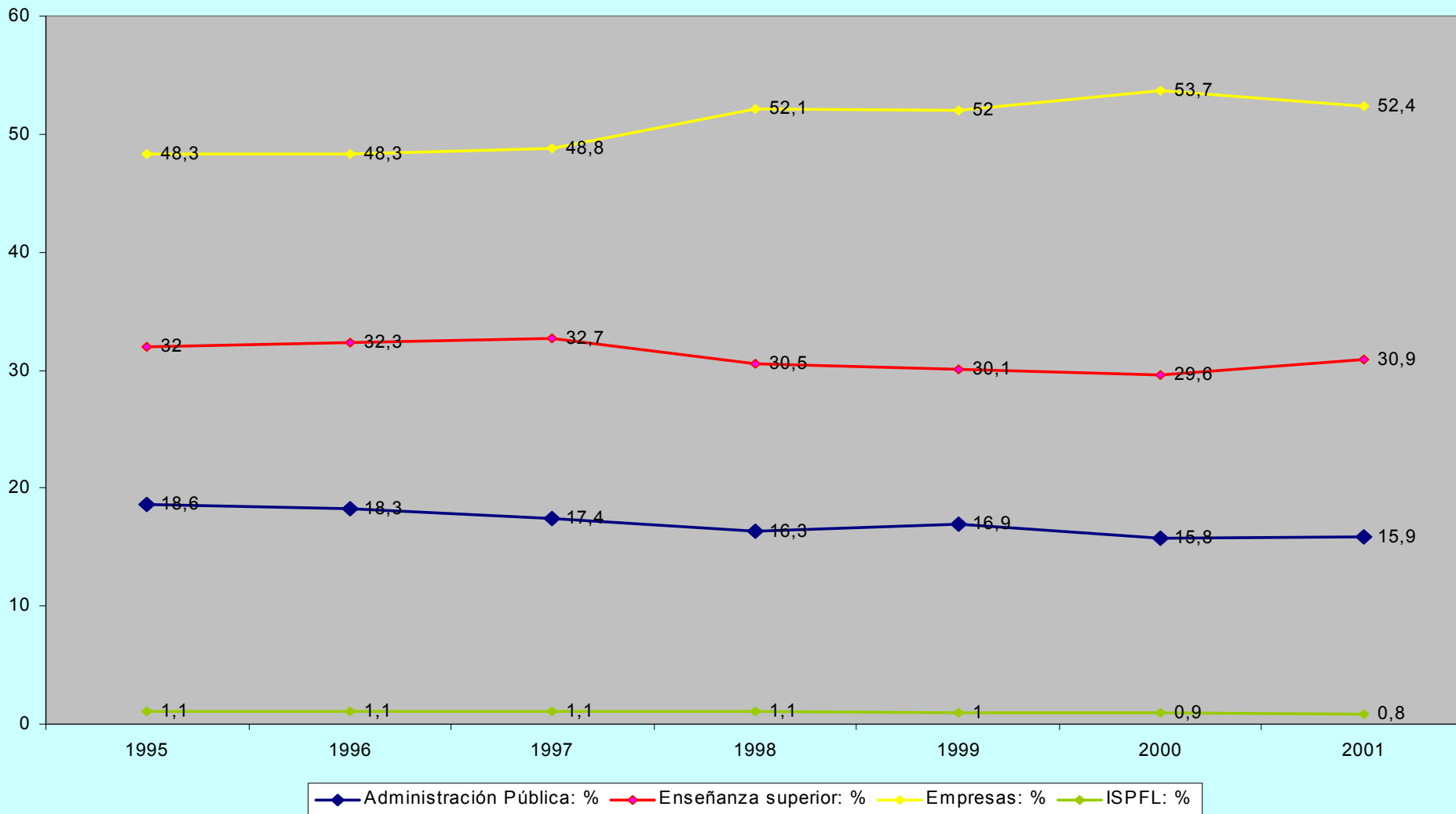
Data: OECD – MSTI database (STI, EAS Division) with DG Research provisional estimates

Notes: (1) FIN, UK, US, EU-15: 1995–2000; JP: 1996–2000; D, E, A: 1995–2001; I: 1997–1999; F: 1997–2000; all other countries: 1995–1999. (2) L data are not included in EU-15 average. (3) B, DK, EL, IRL, I, NL, P, S: 1999; D, E, A: 2001.

Indicadores económicos por CCAA en España

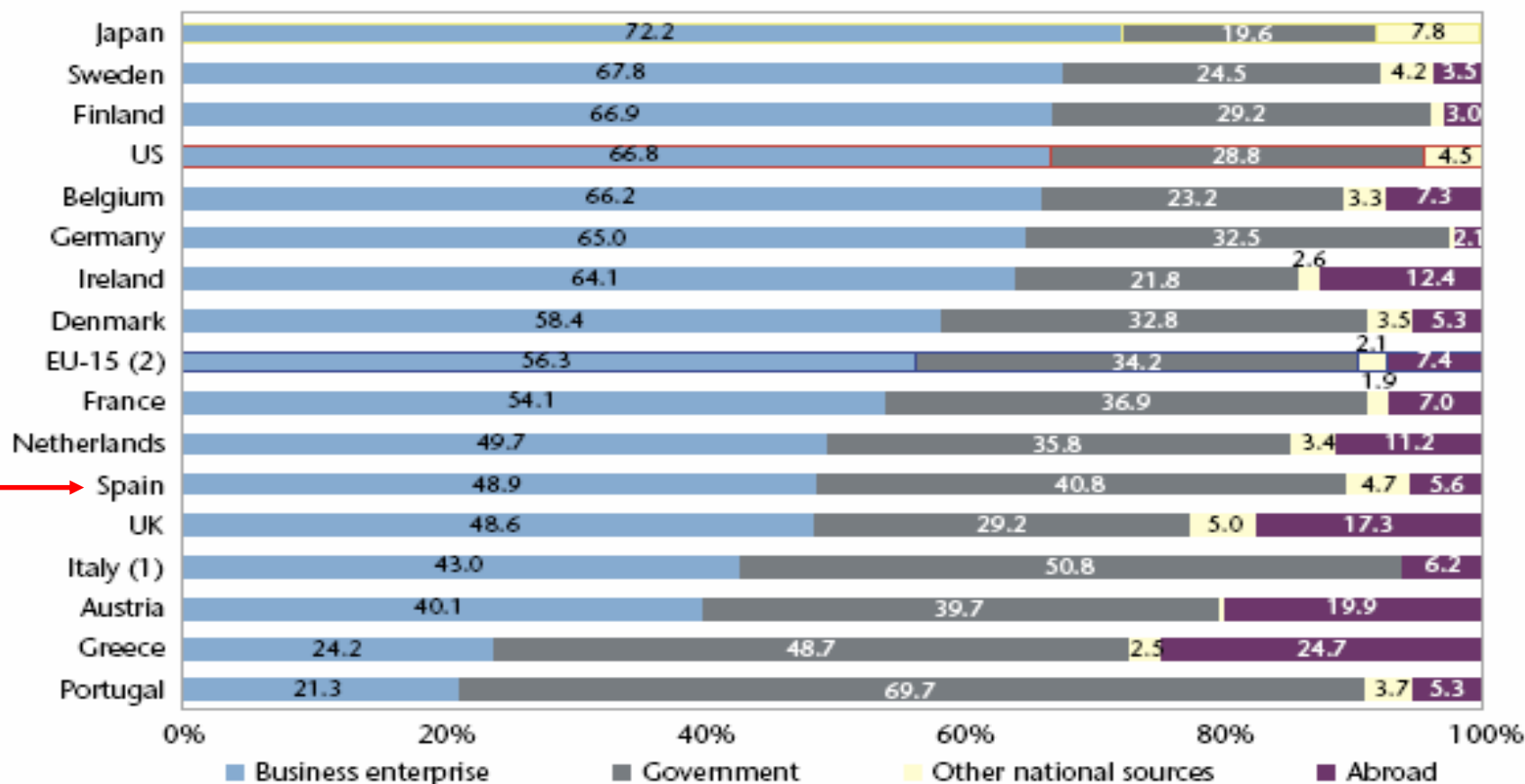


Evolución del gasto en I+D por sectores de ejecución



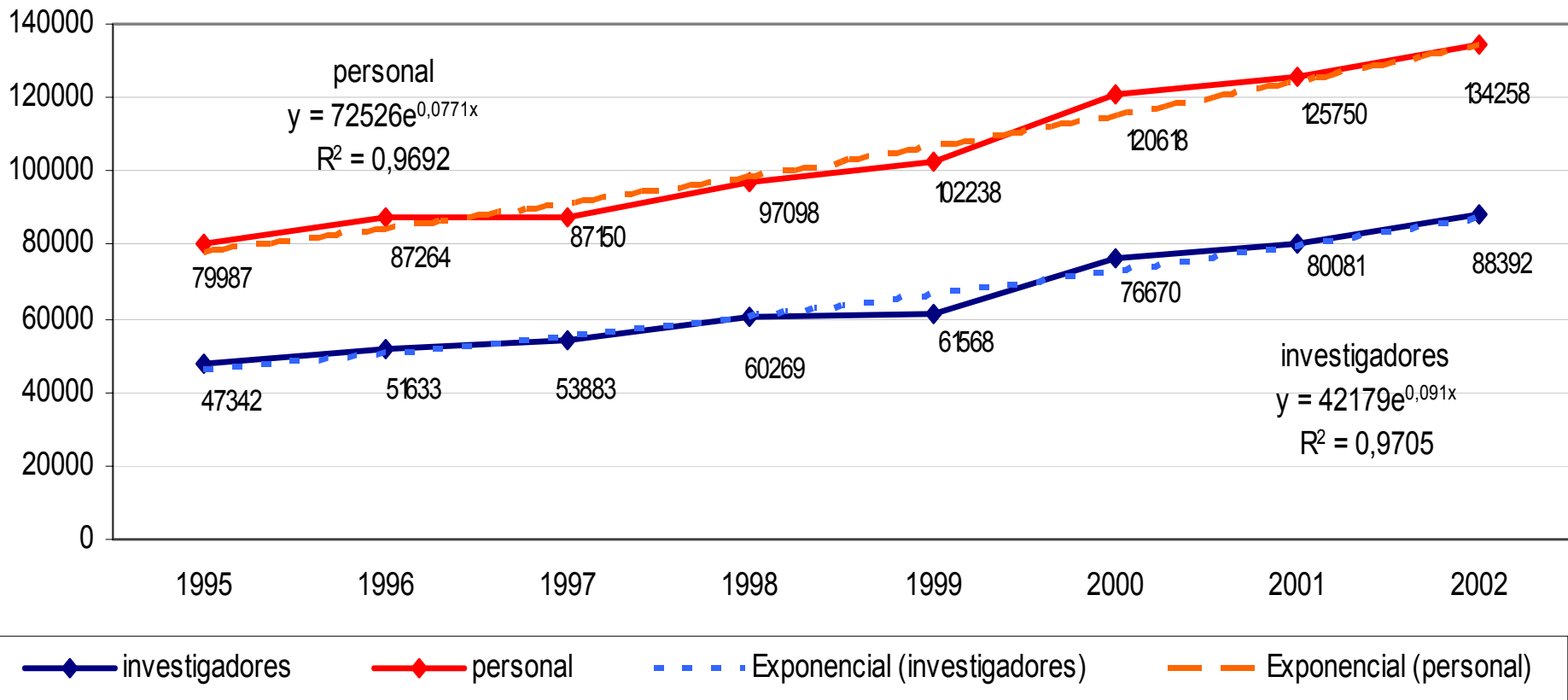
Distribución de la procedencia de los fondos I+D por países

Figure 2.1.12 Financing of R&D – share (%) of each source of total financing, 1999
Countries in decreasing order according to the share of business financing



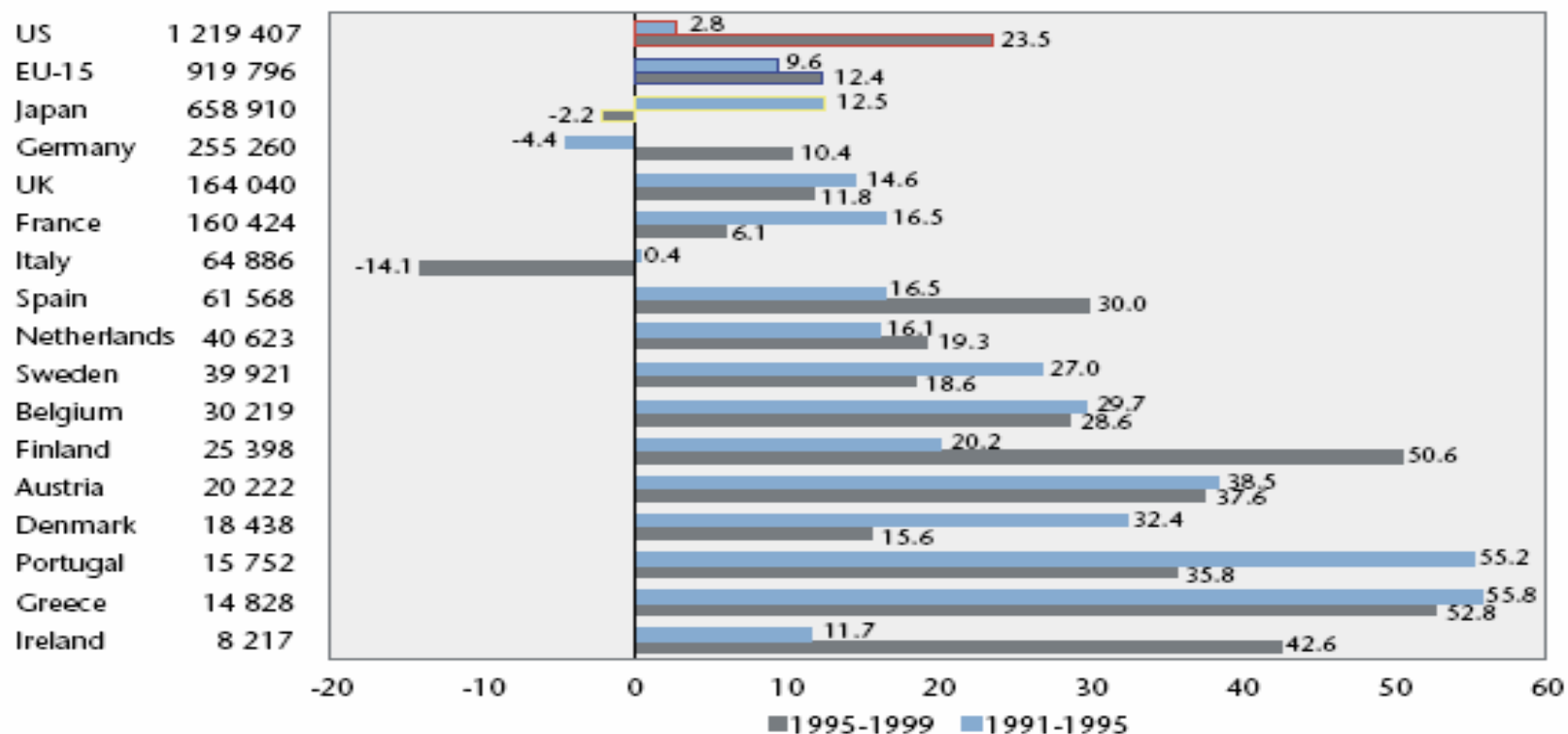
Source: DG Research
Data: OECD – MSTI database (STI, EAS Division) with DG Research provisional estimates
Notes: (1) Data for Italy refer to 1996. (2) L data are not included in EU-15 average.

Evolución del personal I+D (España)



Crecimiento del número de investigadores por países

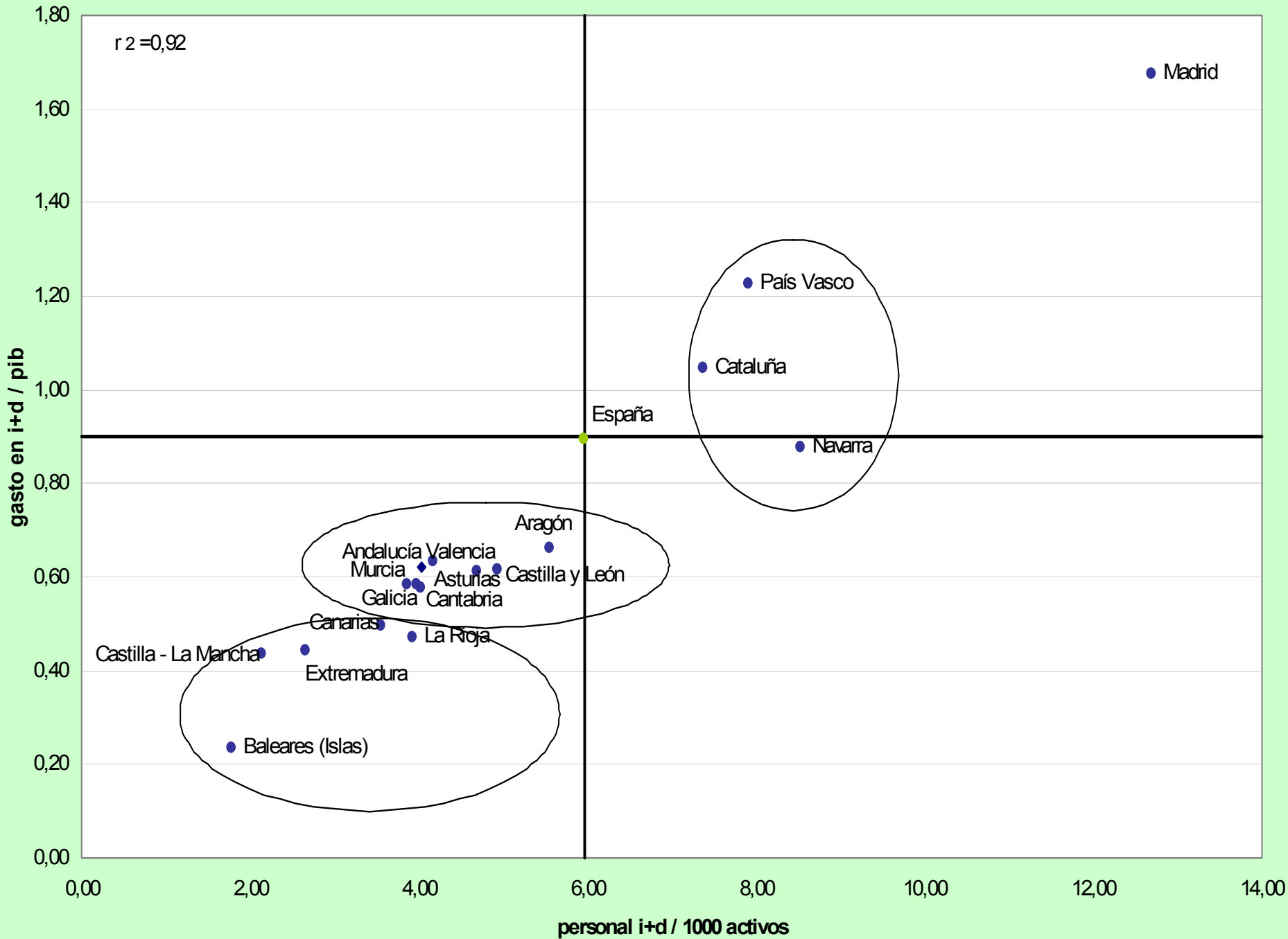
Figure 4.1.1 Total number of researchers 1999 and total growth in % (1991-1999)



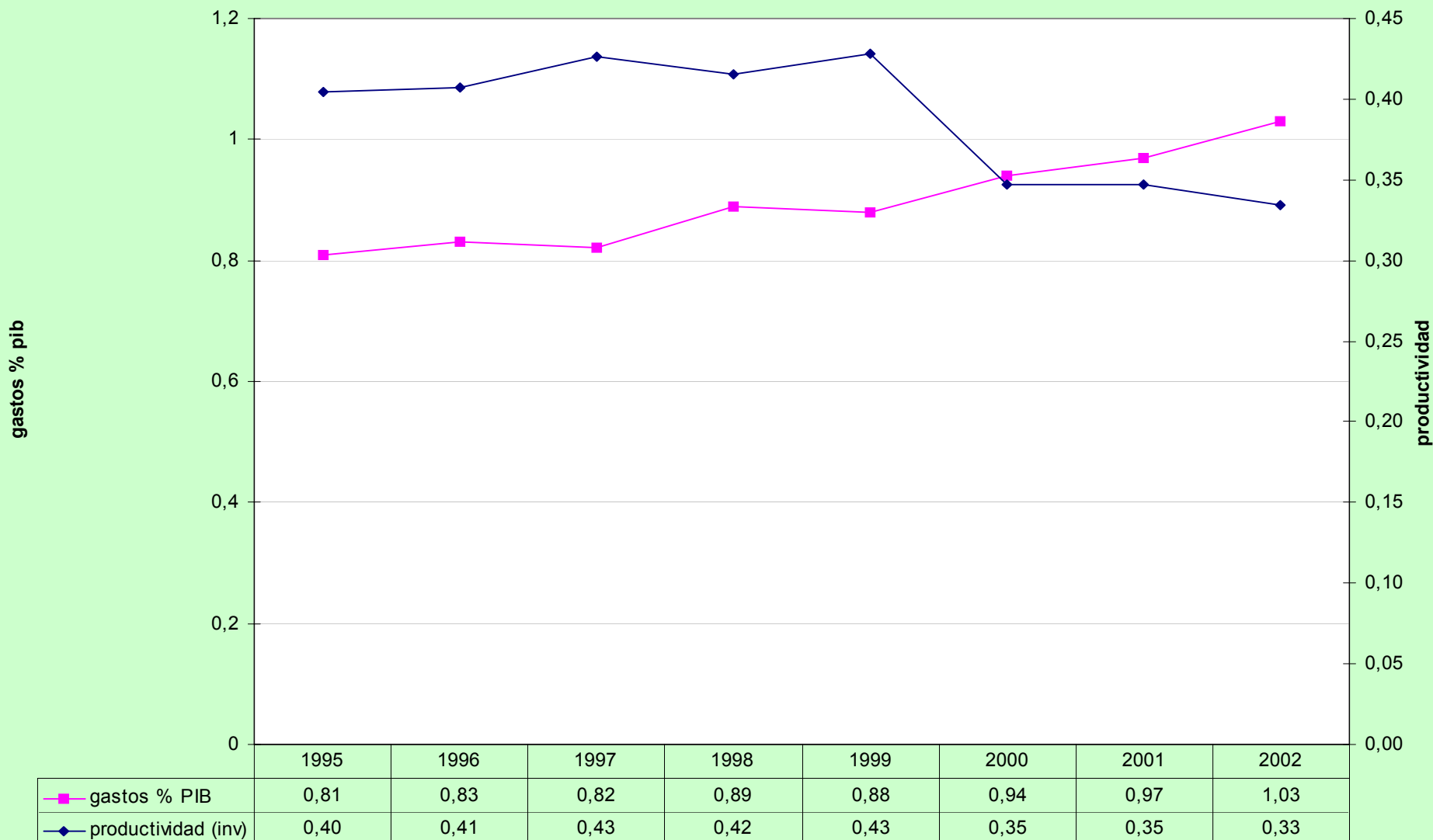
Source: DG Research

Data: OECD, MSTI database

Note: Number of researchers are given in field-time equivalent (FTE). No data for L, which is not included in the EU average. 1999: data for IRL, I, UK, US are estimated; 1991: data for NL and P are estimated. Estimates: DG Research.

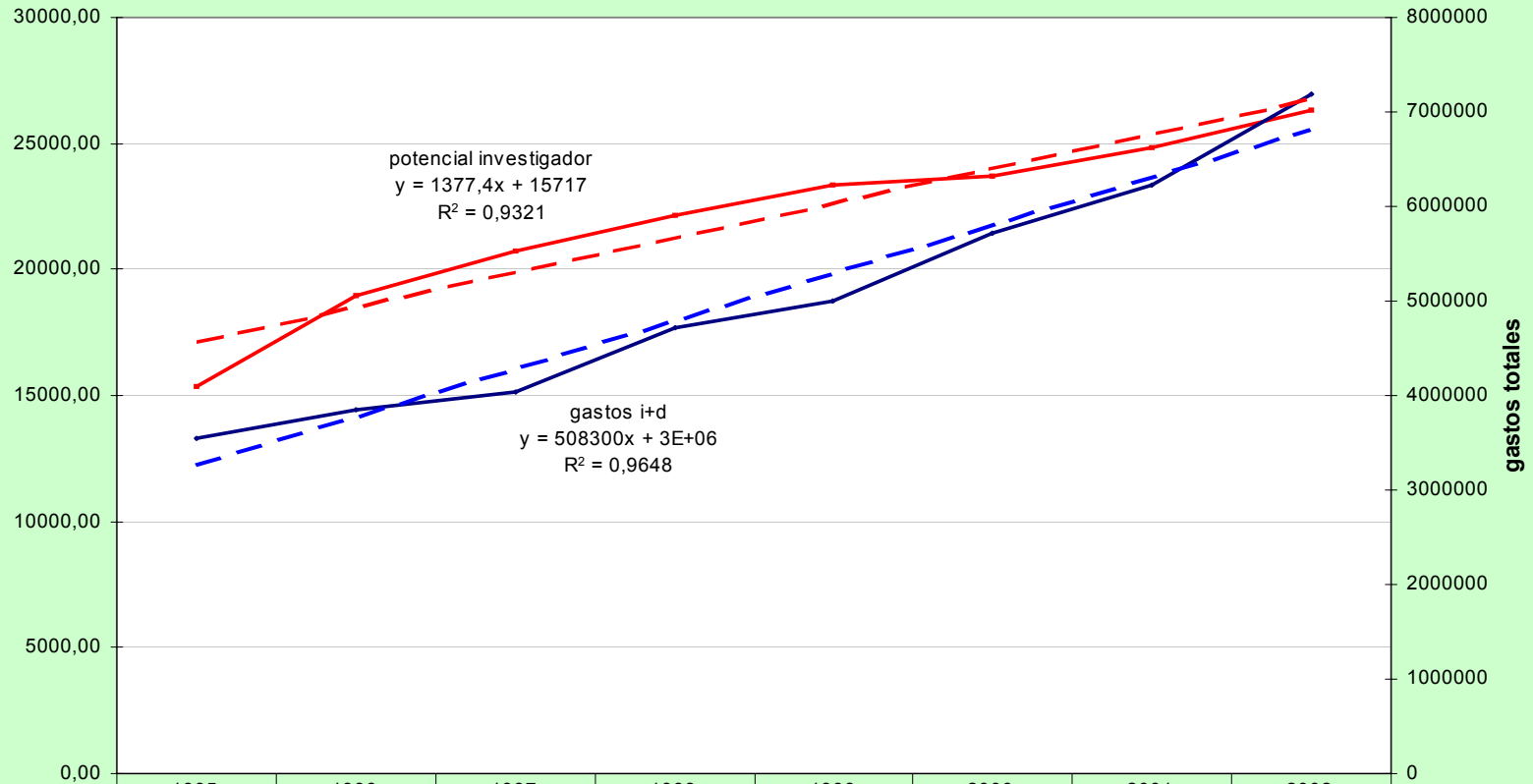


Relación gasto/productividad (España)



Evolución del PI y del gasto total (España)

potencial investigador



pi	15381,77	18995,40	20701,60	22121,63	23313,81	23680,47	24831,29	26295,46
gastos totales (miles de euros)	3550106	3852632	4038904	4715018	4995360	5718988	6227157	7193537

Relación entre riqueza económica y científica por países (D. King, Nature)

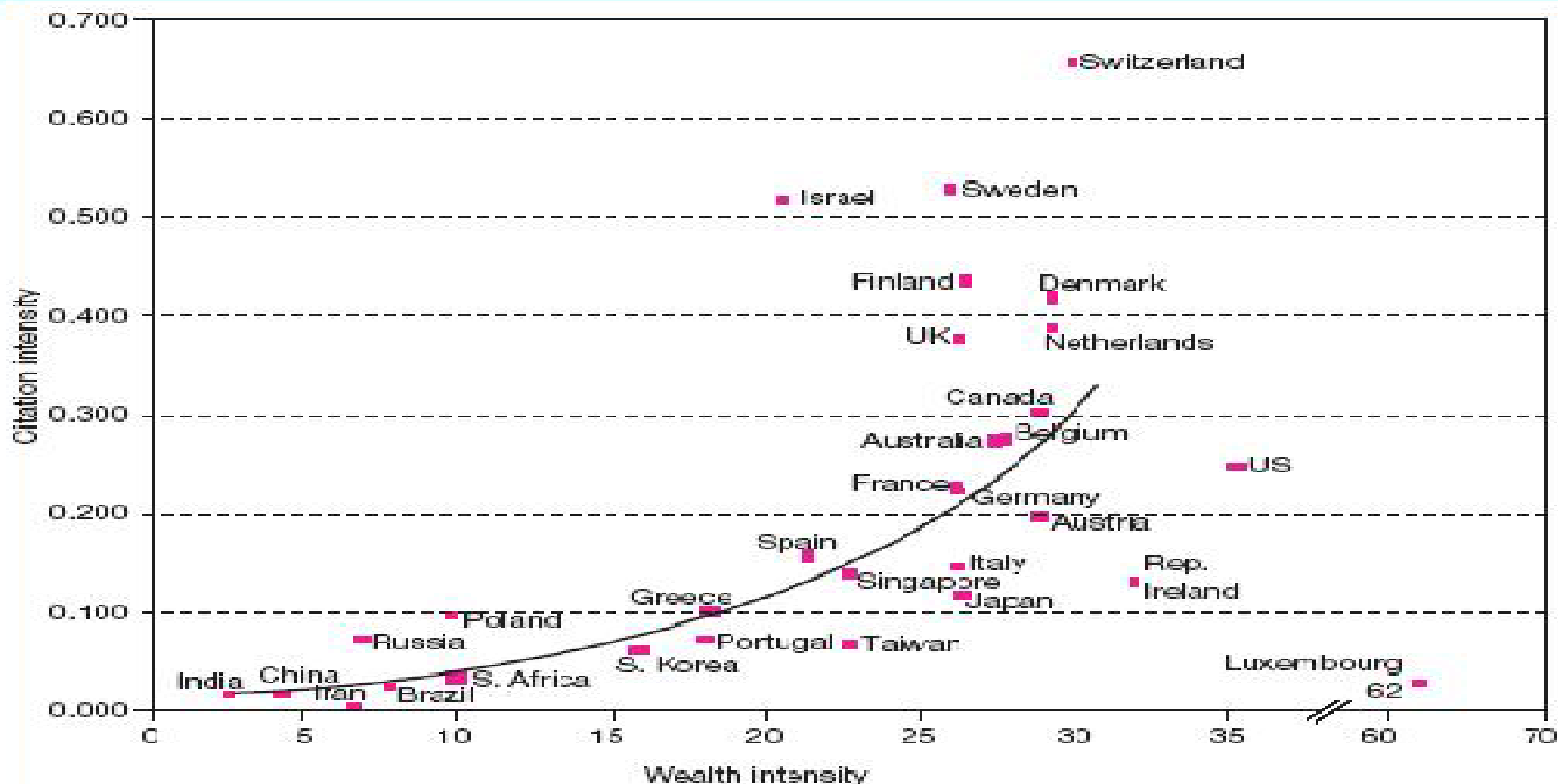
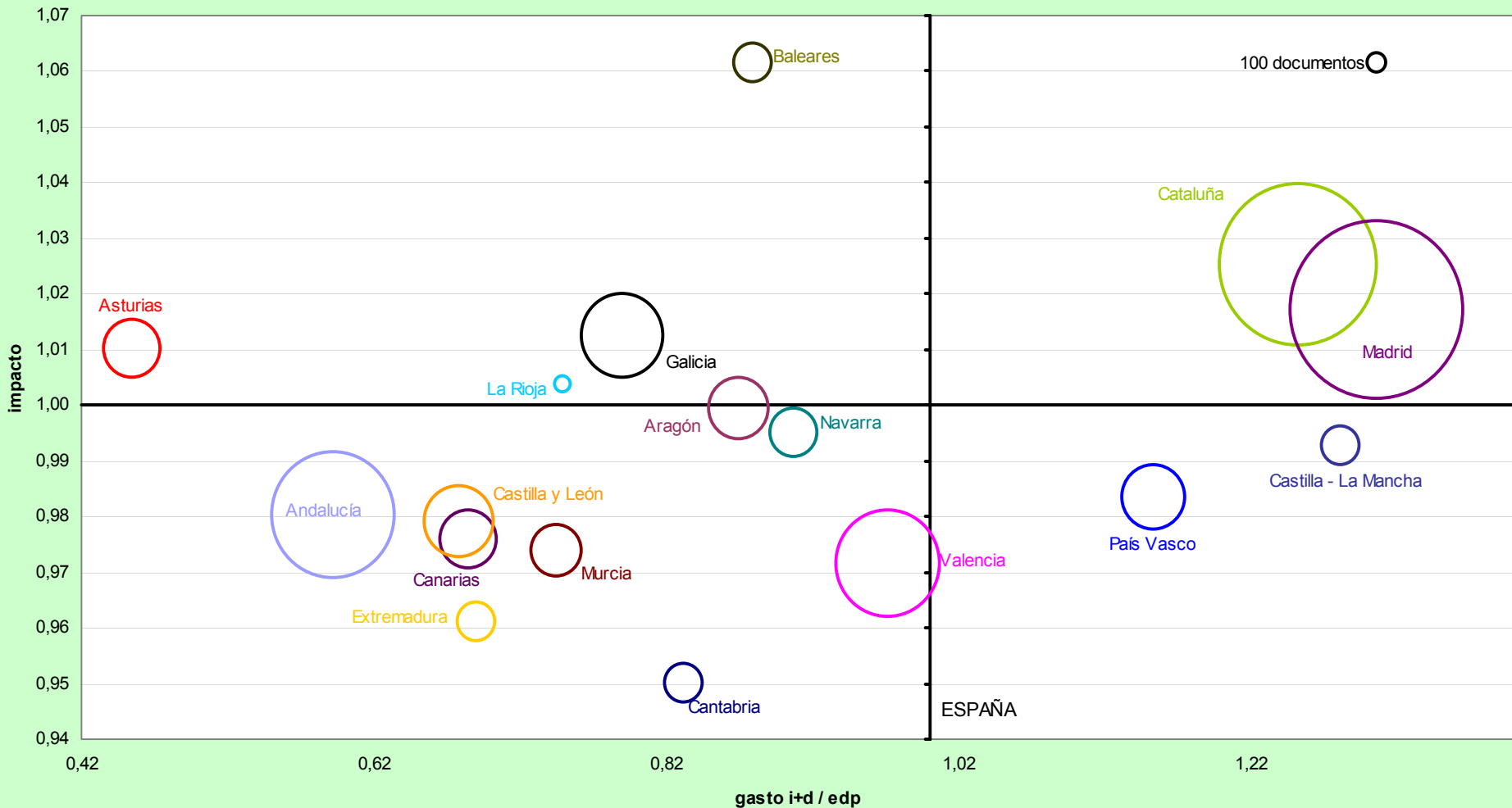
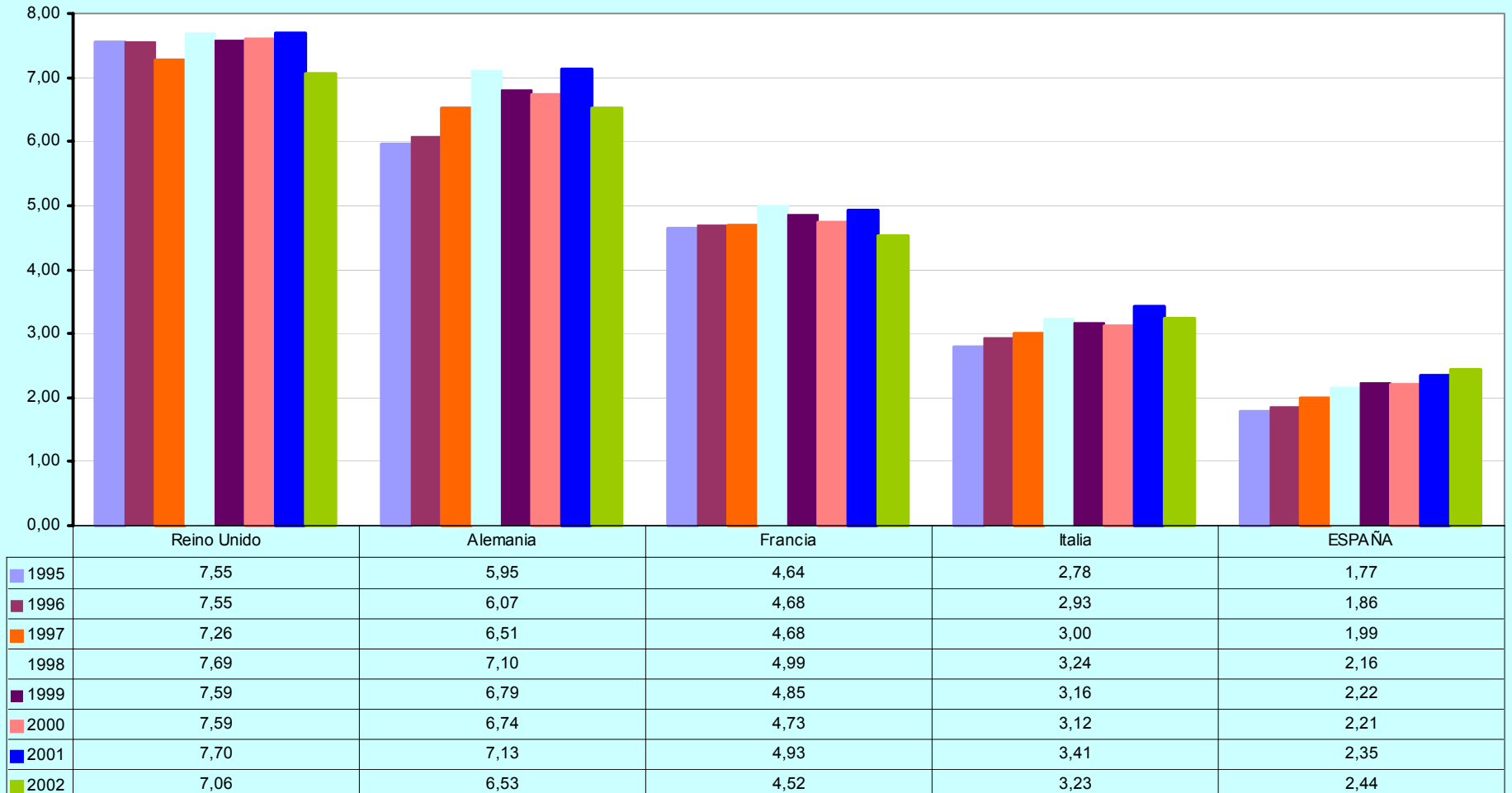


Figure 2 Comparing economic and scientific wealth. National science citation intensity, measured as the ratio of the citations to all papers to the national GDP, shown as a function of the national wealth intensity, or GDP per person, for the 31 nations in the comparator group. GDP and wealth intensity are given in thousands of US dollars at 1995 purchasing-power parity. Sources: Thomson ISI, OECD and the World Bank.

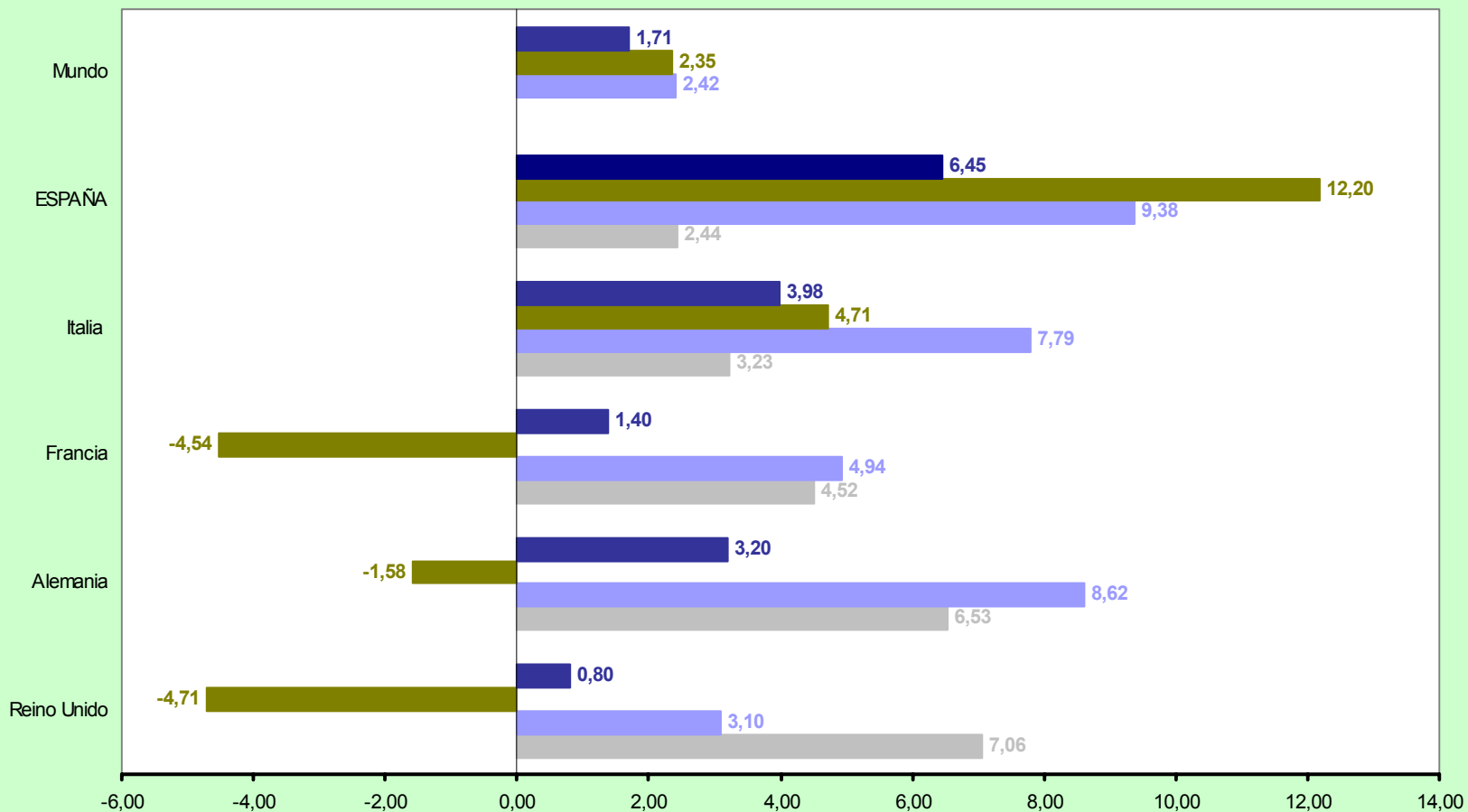
Relación impacto-gasto/edp por CCAA (España)



Producción por países

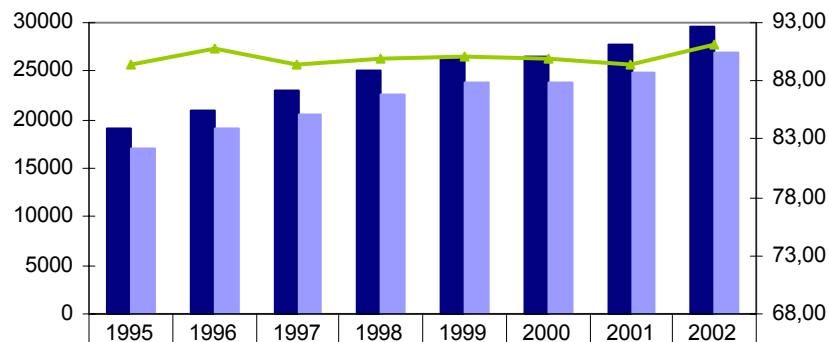


Tasa de crecimiento medio anual por países

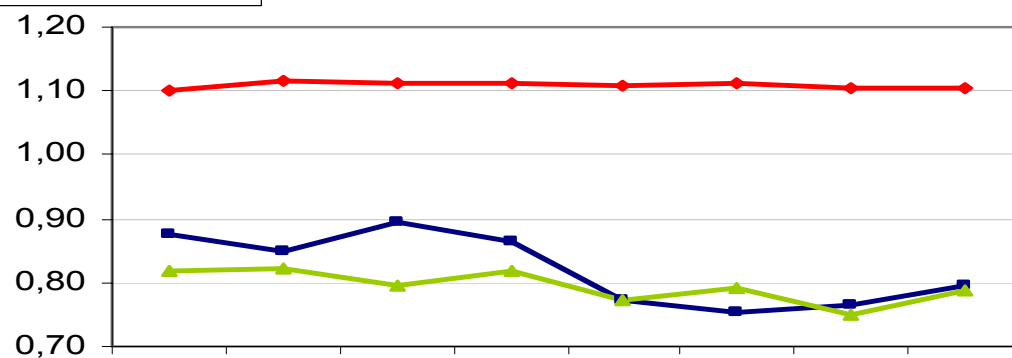


	Reino Unido	Alemania	Francia	Italia	ESPAÑA	Mundo
■ Crecimiento Medio Anual 1995-2002	0,80	3,20	1,40	3,98	6,45	1,71
■ Crecimiento Medio Anual 1999-2002	-4,71	-1,58	-4,54	4,71	12,20	2,35
■ Crecimiento Medio Anual 1995-1998	3,10	8,62	4,94	7,79	9,38	2,42
■ % mundial 2002	7,06	6,53	4,52	3,23	2,44	

Lenguas de publicación (España)

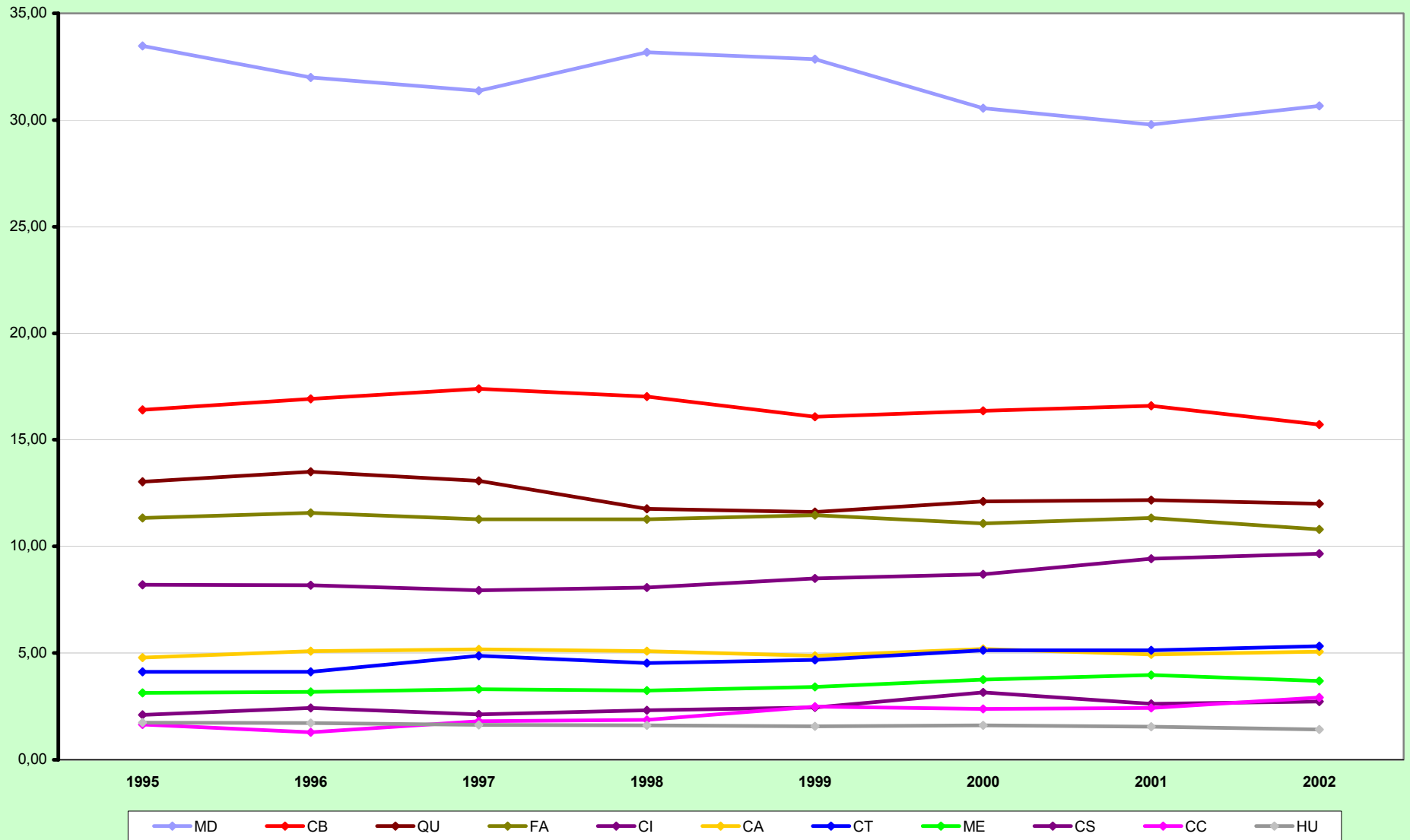


	1995	1996	1997	1998	1999	2000	2001	2002
ndoc - todas las lenguas	19138	21010	22972	25046	26354	26593	27770	29569
ndoc - inglés	17096	19085	20543	22539	23757	23909	24835	26920
%ndoc ingles/ndoc total	89,33	90,84	89,43	89,99	90,15	89,91	89,43	91,04



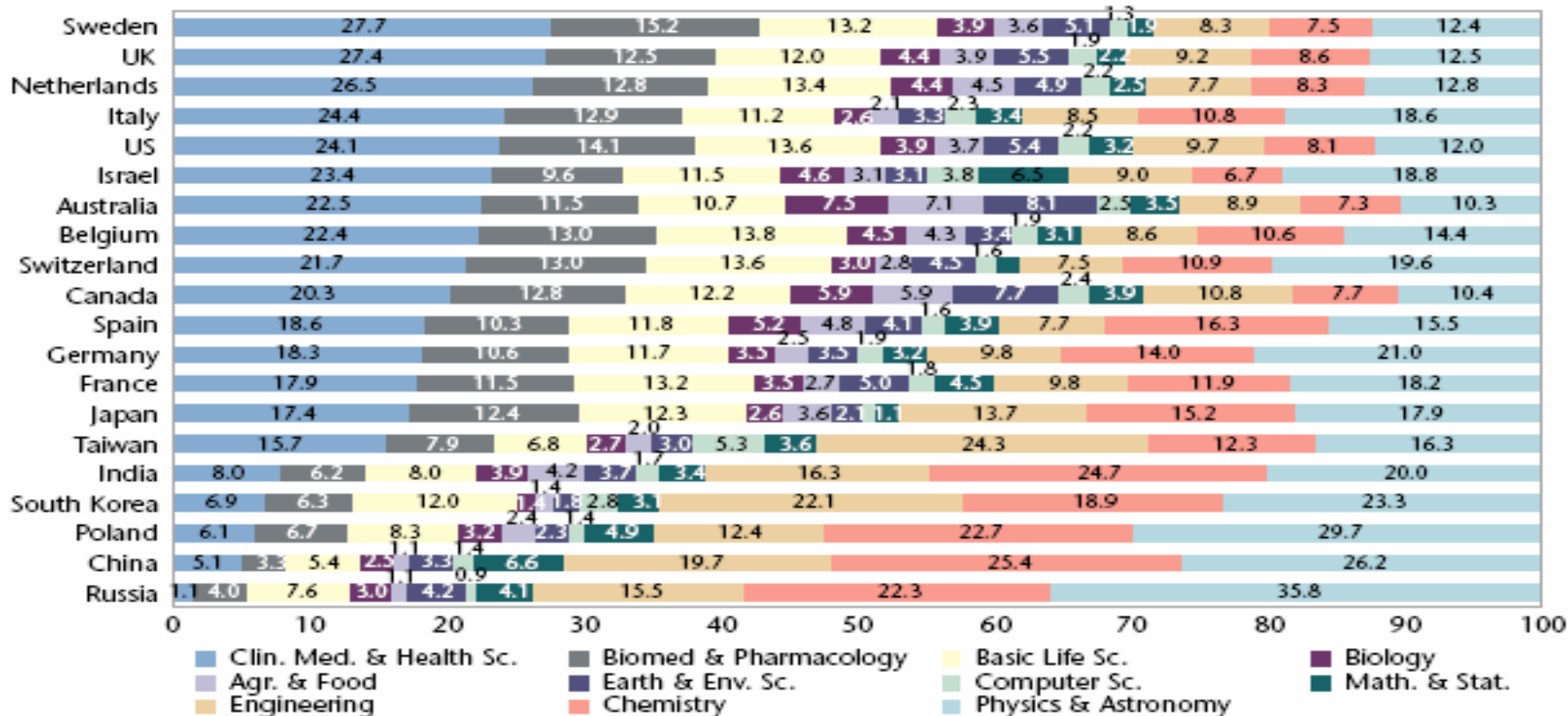
—●— sólo inglés	1,10	1,12	1,11	1,11	1,11	1,11	1,11	1,10
—■— sólo español	0,88	0,85	0,90	0,87	0,77	0,75	0,77	0,80
—▲— otras lenguas	0,82	0,82	0,80	0,82	0,77	0,79	0,75	0,79

Evolución de la producción por áreas científicas (España)



Distribución por campos de la producción por países

Figure 5.2.9 The 20 largest scientific producers: publications (%) by main fields (1995-1999)

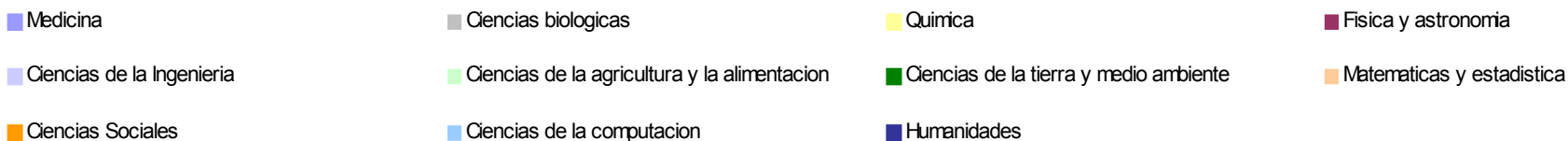
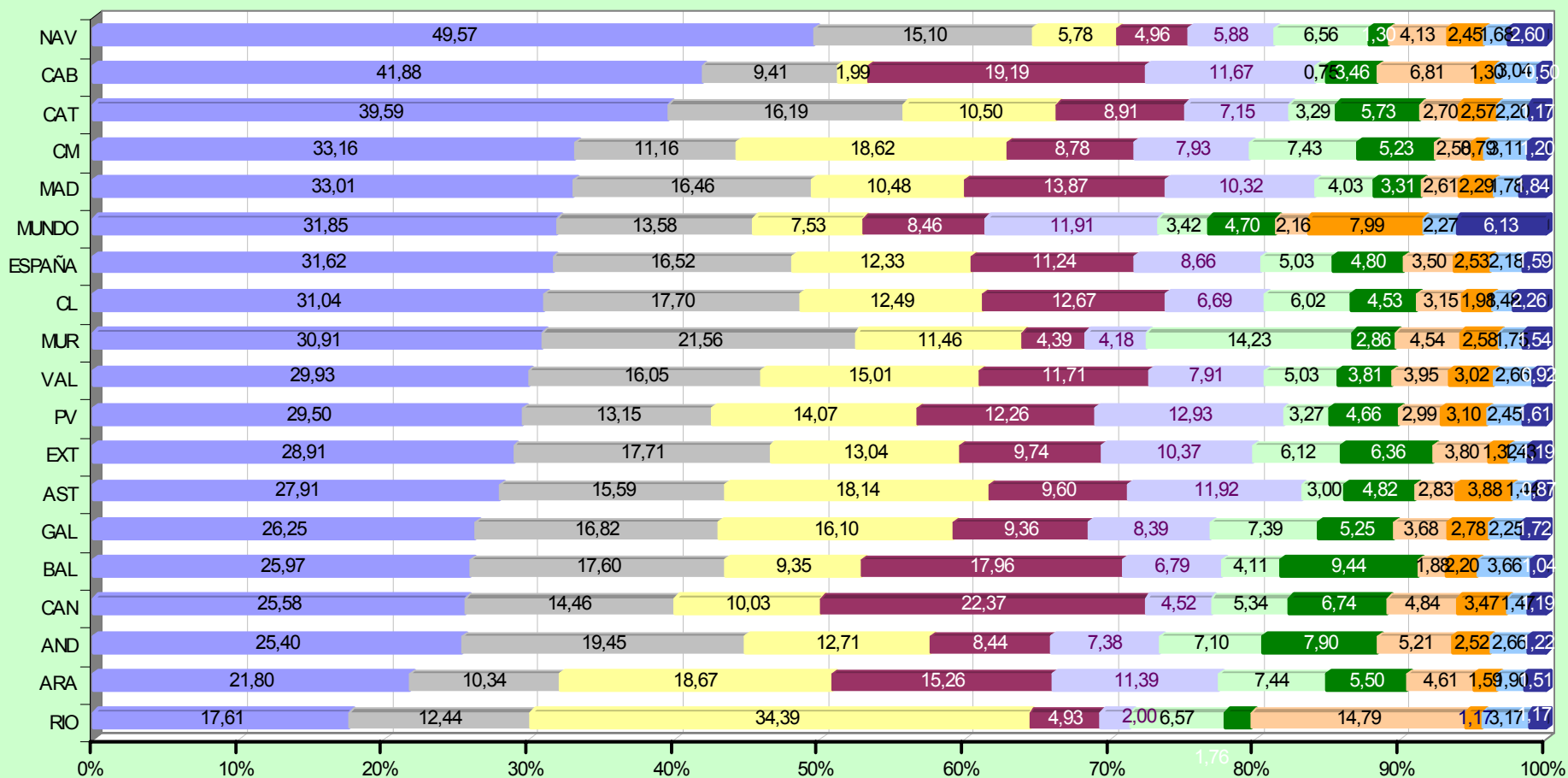


Source: DG Research

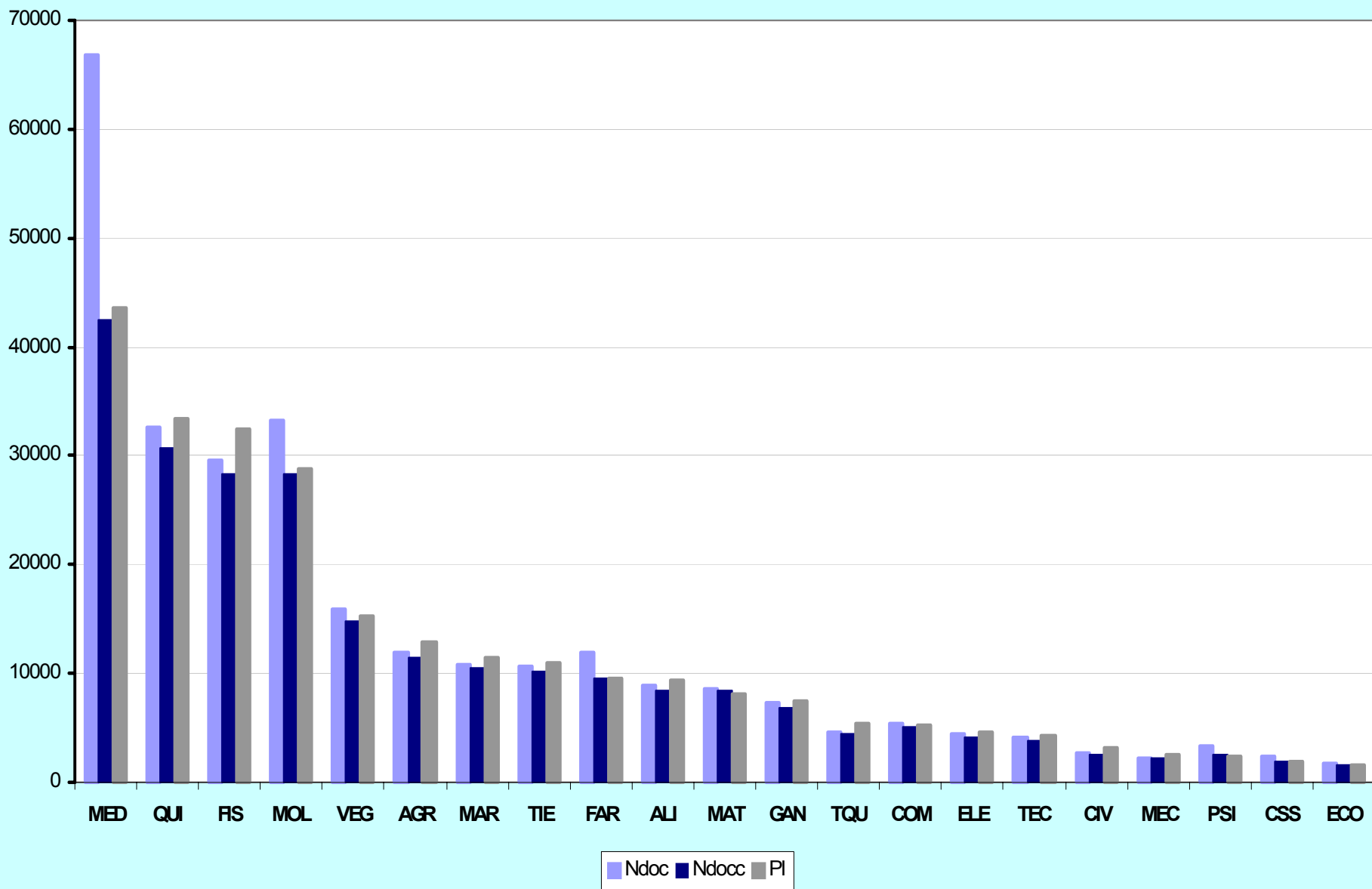
Data: ISI, CWTS (treatments)

Note: Countries are listed according to decreasing share in the life sciences, especially clinical medicine and health sciences. The field "Multidisciplinary" has been omitted.

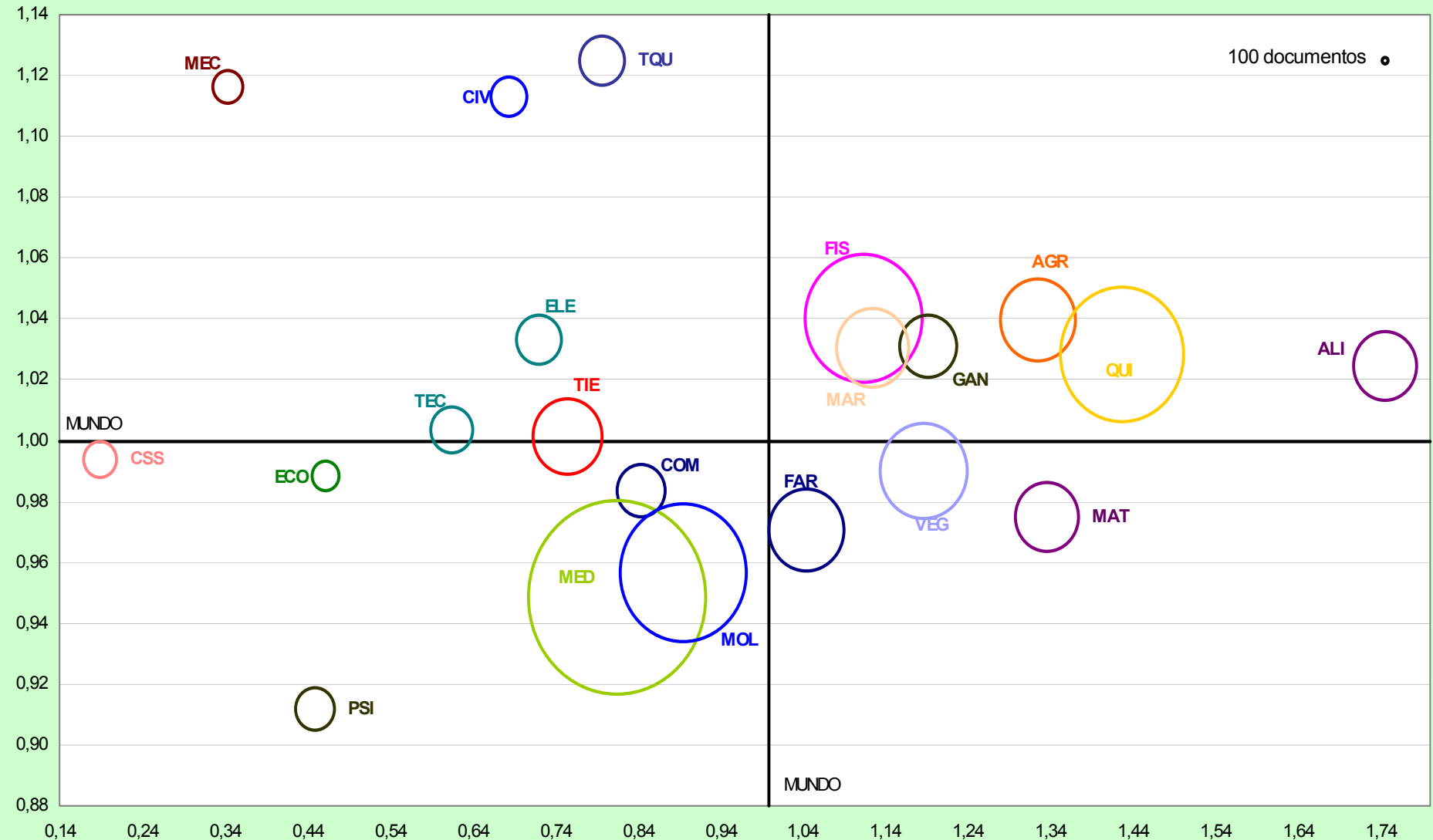
Producción por campos y CCAA (España)



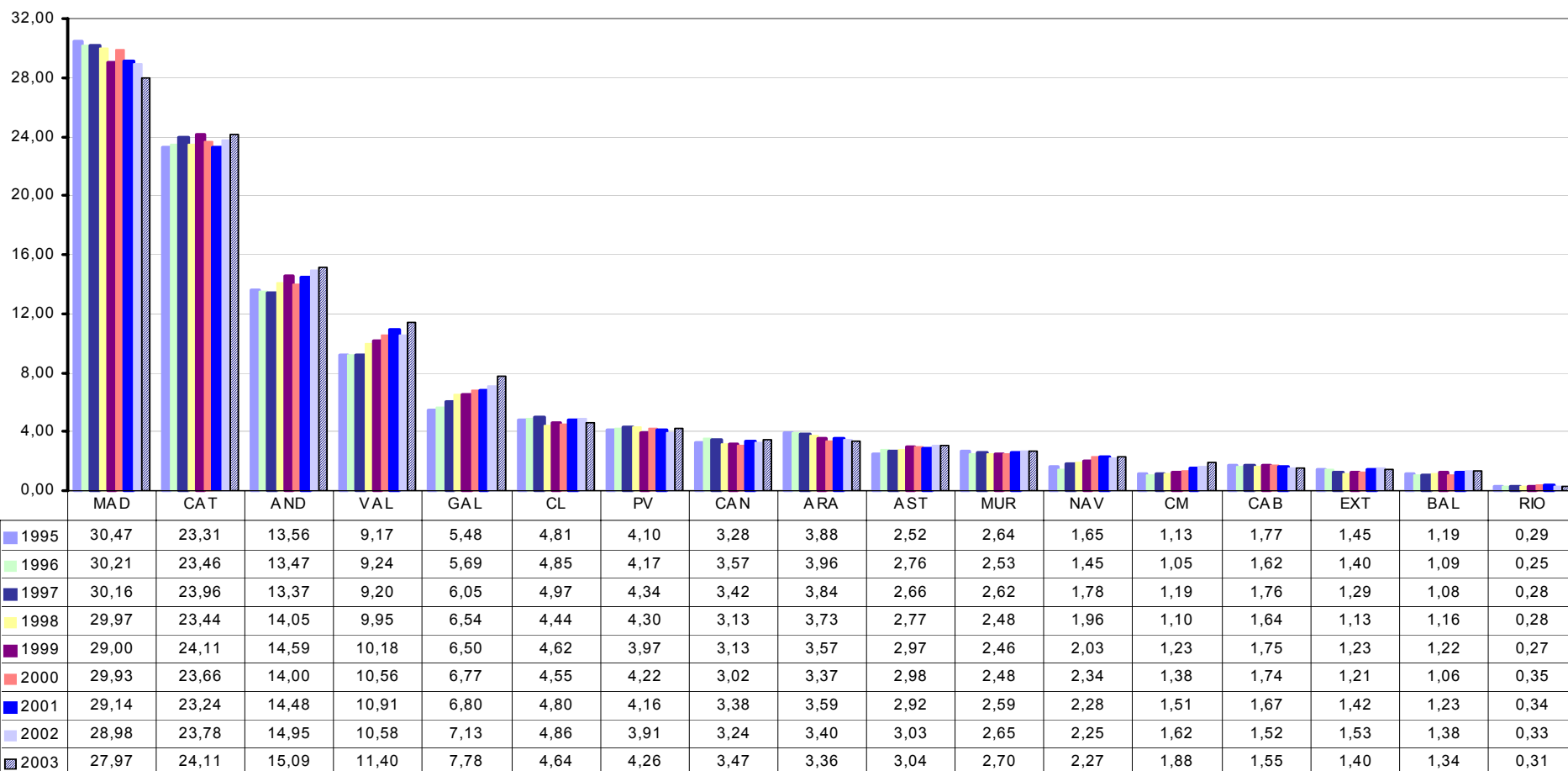
Producción por áreas ANEP (España)



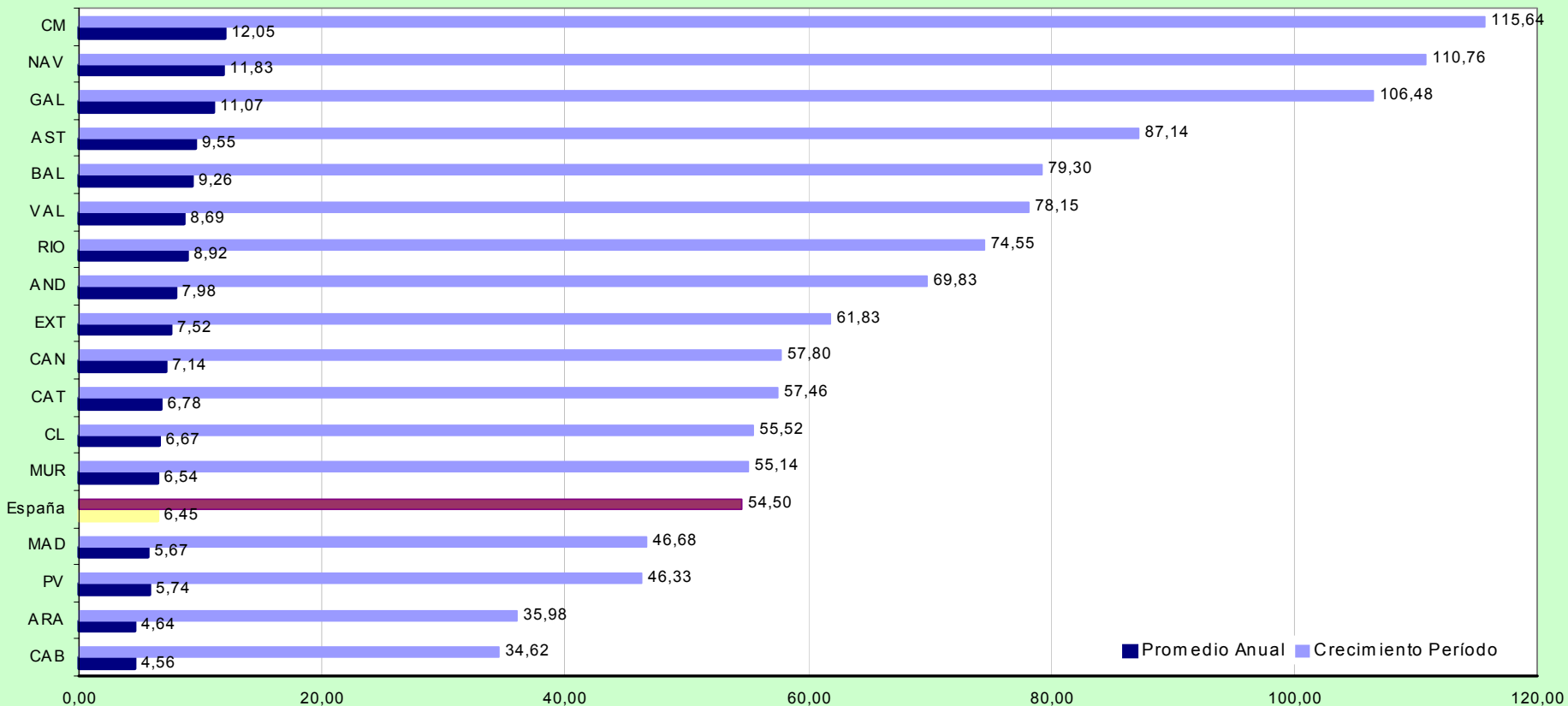
Relación Impacto/esfuerzo por áreas ANEP (España)



Distribución de la producción por CCAA (España)



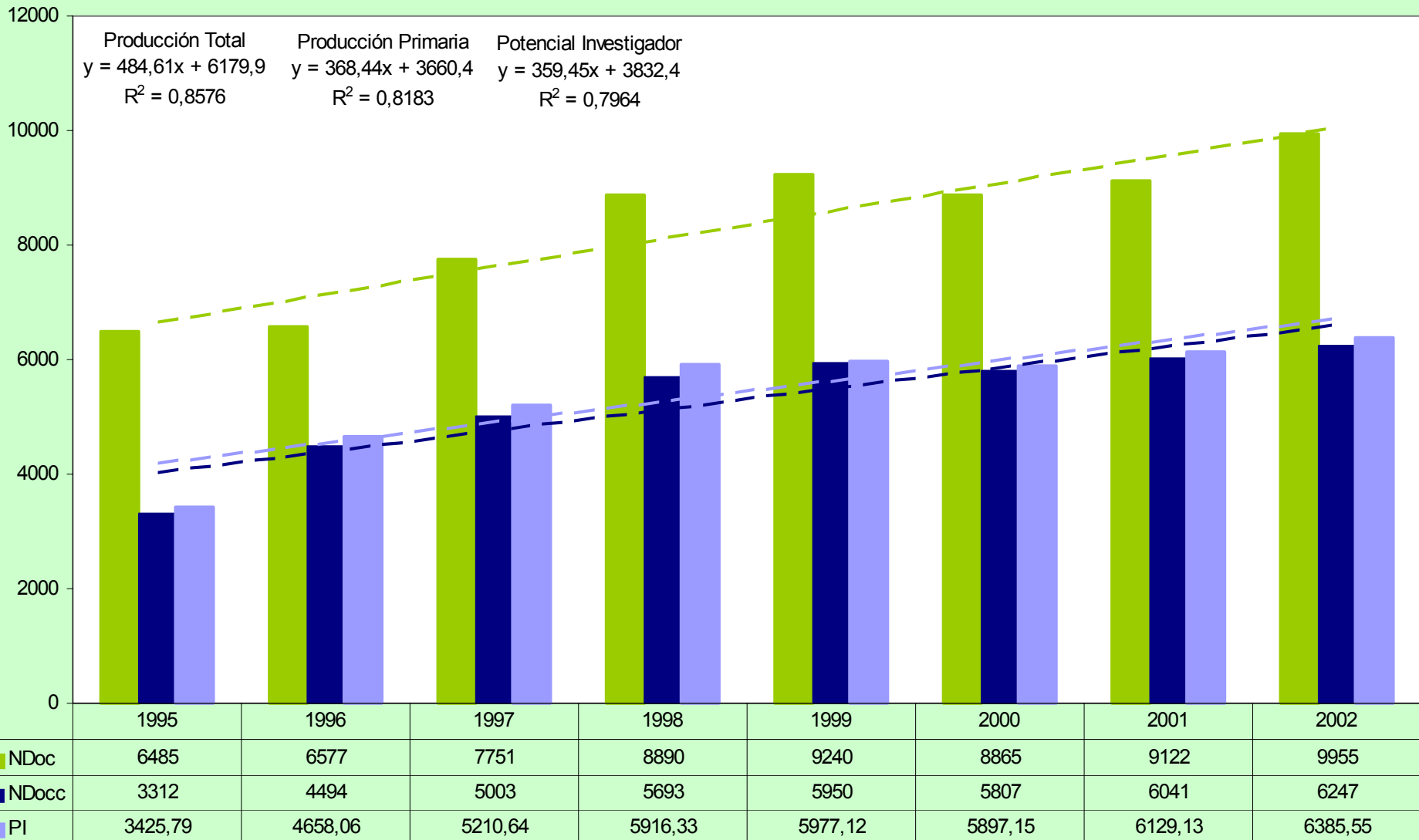
Tasa de crecimiento de la producción por CCAA (España)



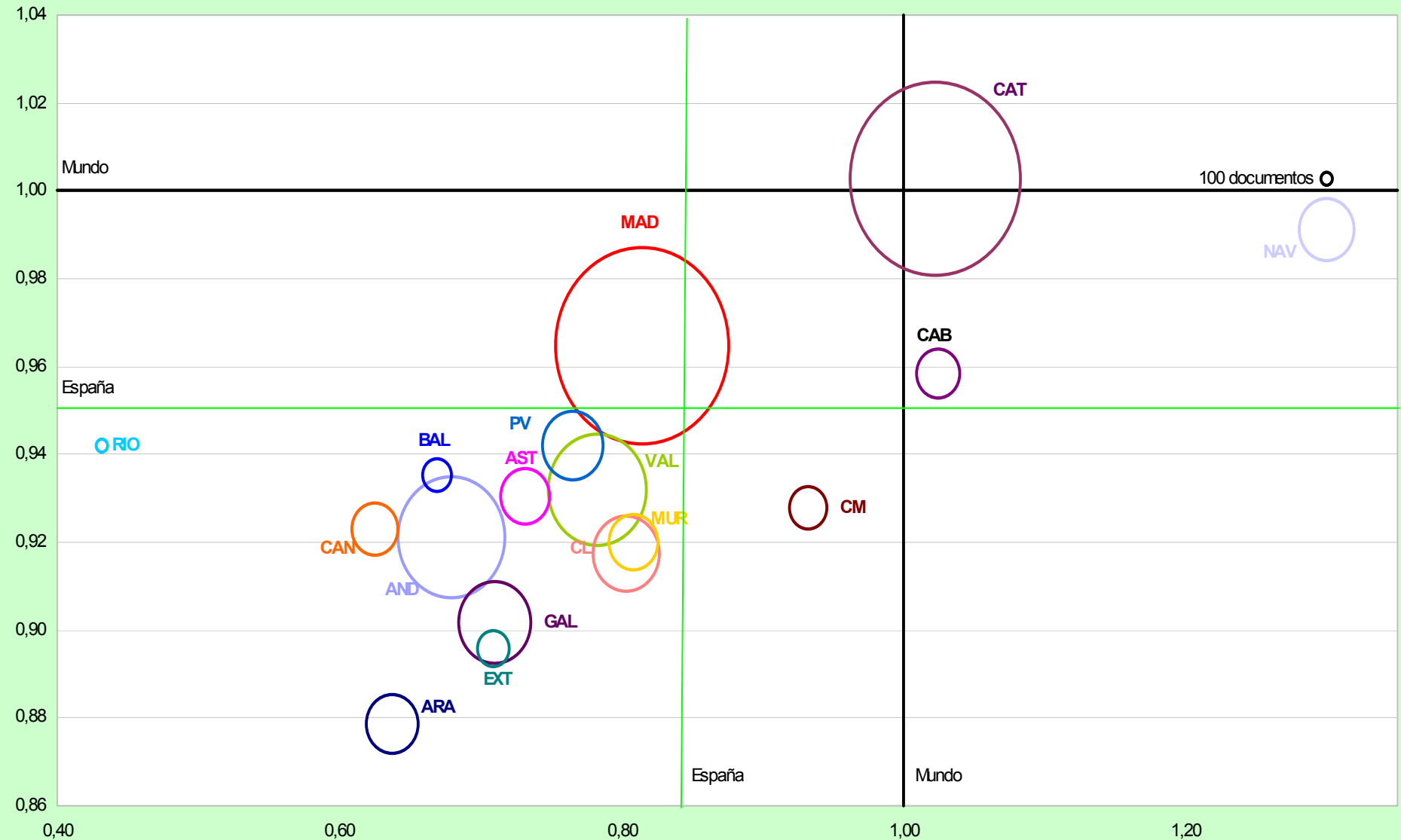
Excelencia científica por CCAA y áreas ANEP (España)

Clase	AND	ARA	AST	BAL	CAB	CAN	CAT	CL	CM	EXT	GAL	MAD	MUR	NAV	PV	RIO	VAL
AGR	2464	489	294	52	66	228	2184	653	167	236	1047	2783	604	217	352	40	1227
ALI	1635	260	232	82	20	169	1424	502	134	163	720	2374	517	296	281	38	1001
CI	337	113	70	29	80	43	635	106	33	25	165	812	32	21	99	8	282
COM	912	162	101	109	126	103	1306	160	92	47	327	1263	119	88	249	20	639
CSS	265	96	71	25	37	63	648	101	14	25	100	797	37	69	136	5	238
ECO	92	87	62	6	13	45	541	47	6	9	61	517	30	66	86	4	267
ELE	681	133	78	78	170	81	955	159	76	39	382	1204	69	114	173	2	423
FAR	1766	212	218	125	91	461	2955	660	95	228	624	3379	340	380	448	29	1314
FIS	3031	1369	714	507	883	1809	5589	1497	278	333	1474	10849	317	277	1288	44	3104
GAN	1230	353	220	50	39	283	1384	501	58	151	739	1794	356	114	171	24	593
MAR	1056	477	371	81	75	95	2033	402	64	83	450	4563	62	92	1074	8	998
MAT	1777	438	202	50	278	329	1589	405	78	115	550	1911	293	188	306	112	961
MEC	320	128	94	5	67	38	459	61	38	31	101	657	52	36	120	5	167
MED	7666	1904	1711	649	1406	1586	19750	3091	941	736	3480	19780	1690	2133	2571	106	6427
MOL	4768	684	883	320	432	672	7863	1713	278	472	1783	11264	1142	708	1190	87	2814
PSI	627	38	221	56	22	139	615	120	17	33	270	787	123	33	146	2	443
QUI	5243	1605	1280	315	137	782	6719	1593	567	547	2810	7407	863	287	1299	230	3961
TEC	654	109	67	85	170	74	907	142	64	37	373	1092	65	107	157	0	405
TIE	2329	634	418	193	116	407	2767	470	122	165	741	2221	160	47	486	16	827
TQU	514	332	265	40	60	113	723	187	60	95	391	1388	60	40	297	2	423
VEG	3479	502	346	308	74	719	3421	676	128	216	1392	3619	726	244	428	21	1373

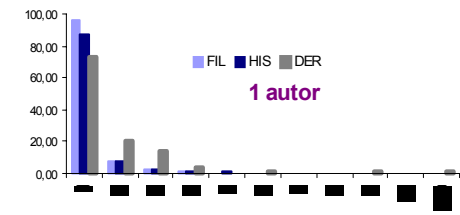
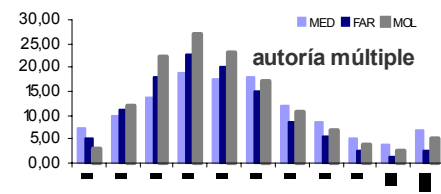
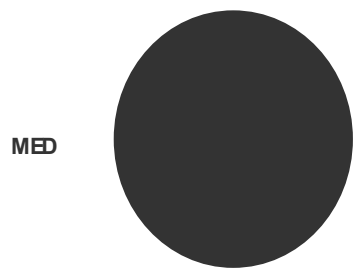
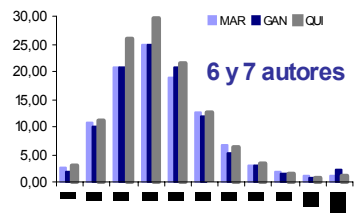
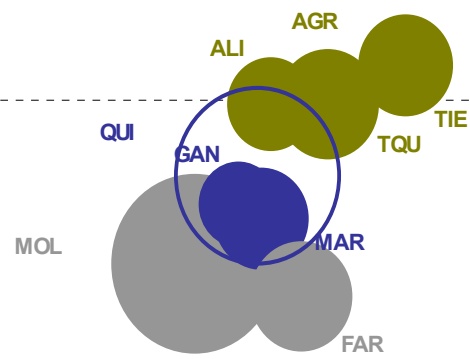
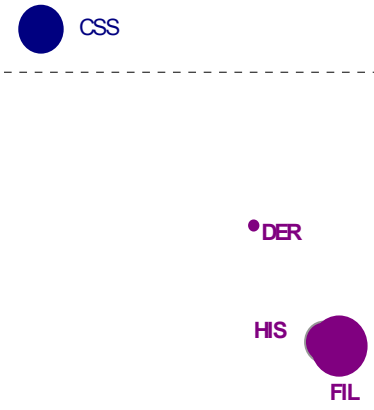
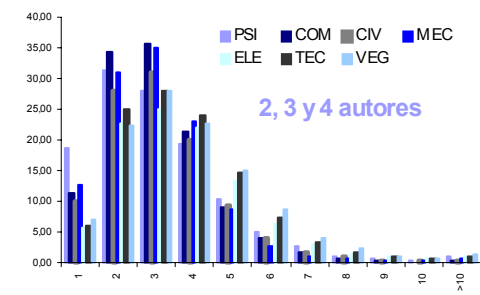
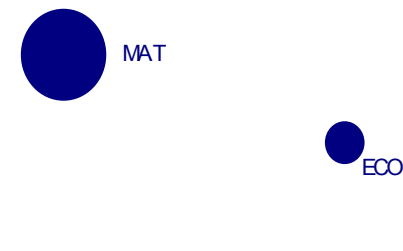
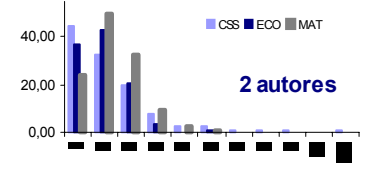
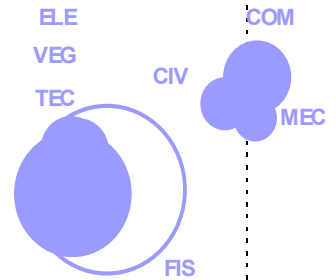
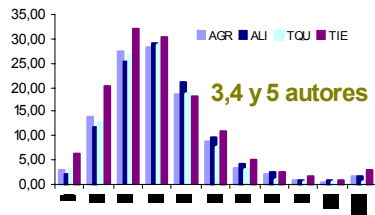
Evolución de la producción en Medicina (España)



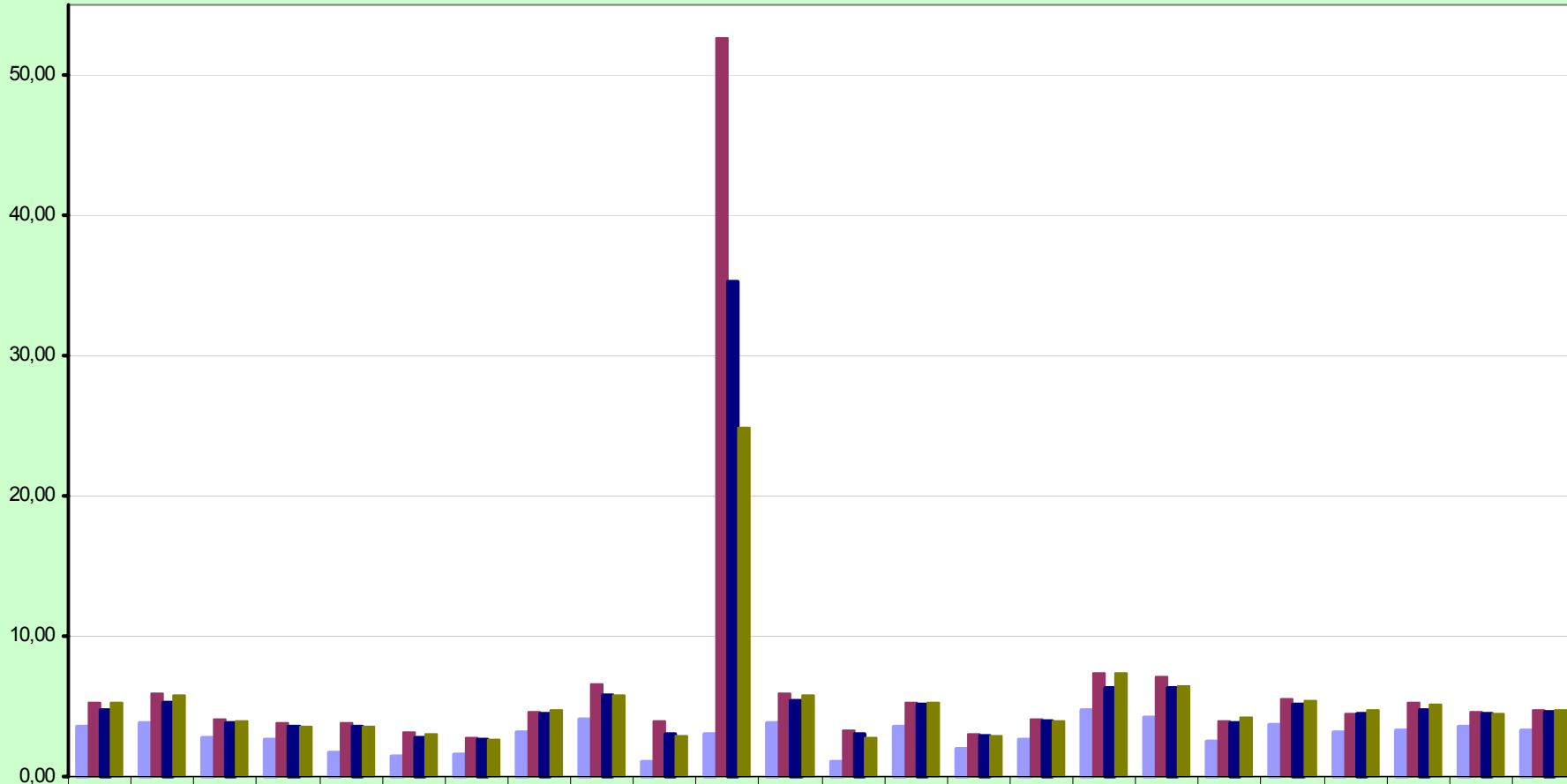
Relación impacto/esfuerzo en Medicina (España)



Patrones de coautoría por áreas ANEP (España)

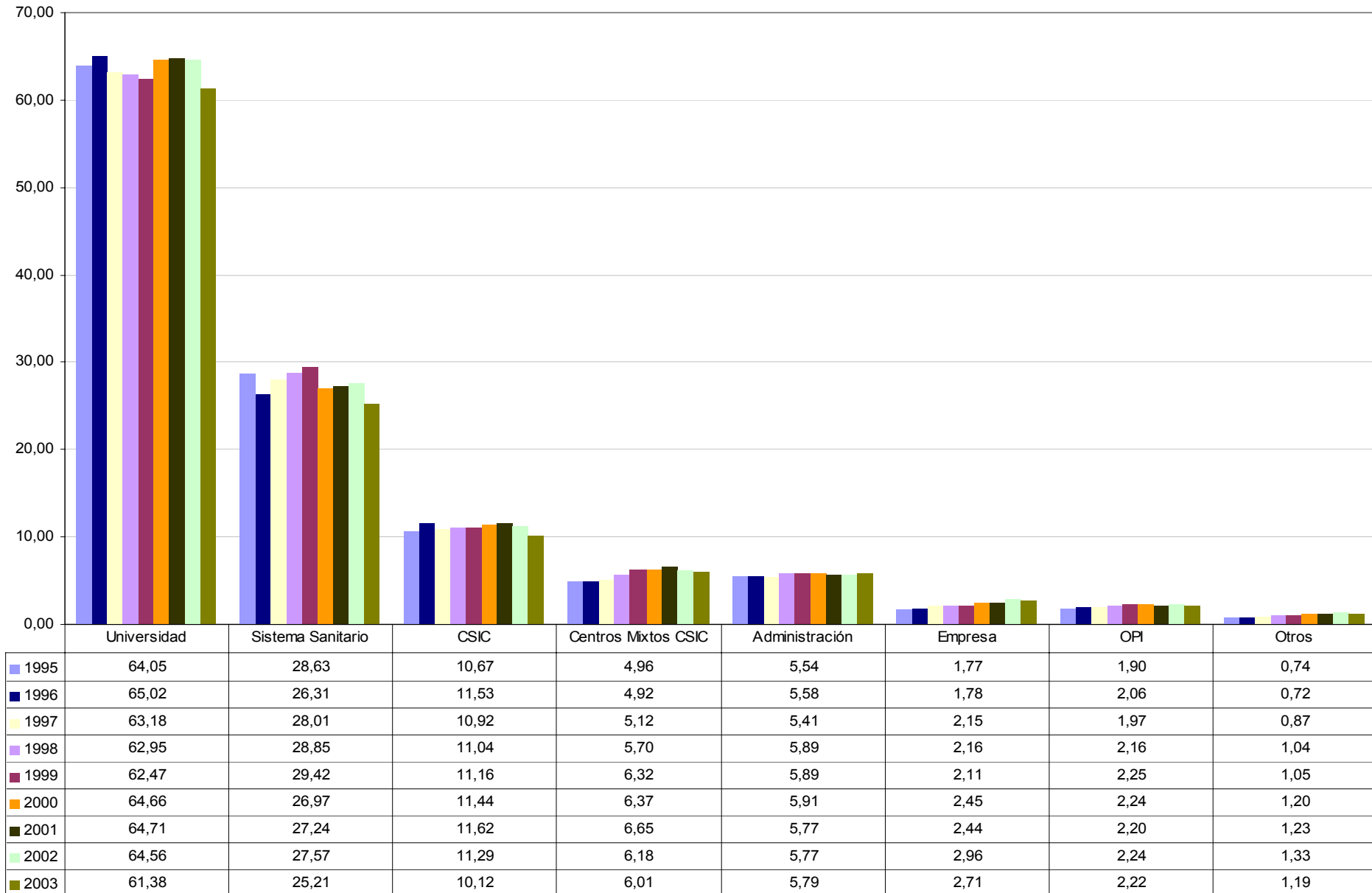


Coautoría por áreas ANEP (España)



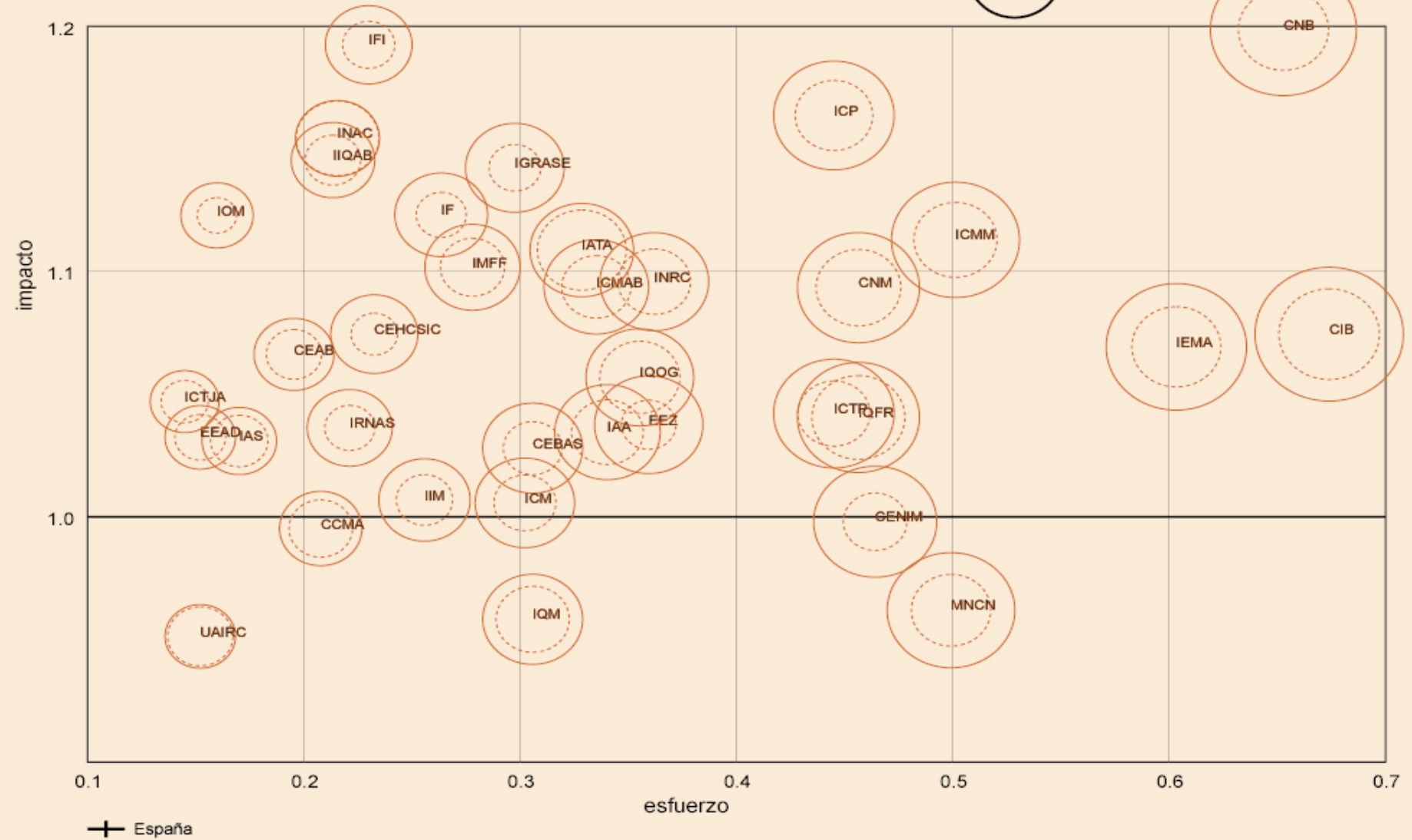
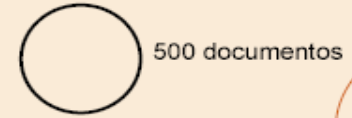
	AGR	ALI	CIV	COM	CSS	DER	ECO	ELE	FAR	FIL	FIS	GAN	HIS	MAR	MAT	MEC	MED	MOL	PSI	QUI	TEC	TIE	TQU	VEG
sin	3,59	3,78	2,77	2,69	1,71	1,41	1,52	3,13	4,04	1,09	2,96	3,88	1,10	3,52	1,94	2,65	4,77	4,25	2,55	3,68	3,16	3,24	3,51	3,23
interregional	5,27	5,98	4,11	3,79	3,83	3,20	2,77	4,54	6,53	3,94	52,60	5,90	3,33	5,33	2,98	4,03	7,33	7,05	3,99	5,53	4,53	5,23	4,54	4,73
nacional	4,80	5,30	3,83	3,61	3,55	2,79	2,62	4,44	5,82	3,05	35,22	5,37	3,01	5,16	2,92	3,93	6,31	6,26	3,82	5,18	4,44	4,80	4,45	4,55
internacional	5,28	5,74	3,90	3,57	3,49	3,07	2,57	4,69	5,85	2,94	24,87	5,84	2,82	5,27	2,86	3,89	7,35	6,42	4,15	5,33	4,75	5,17	4,49	4,71

Producción por sectores

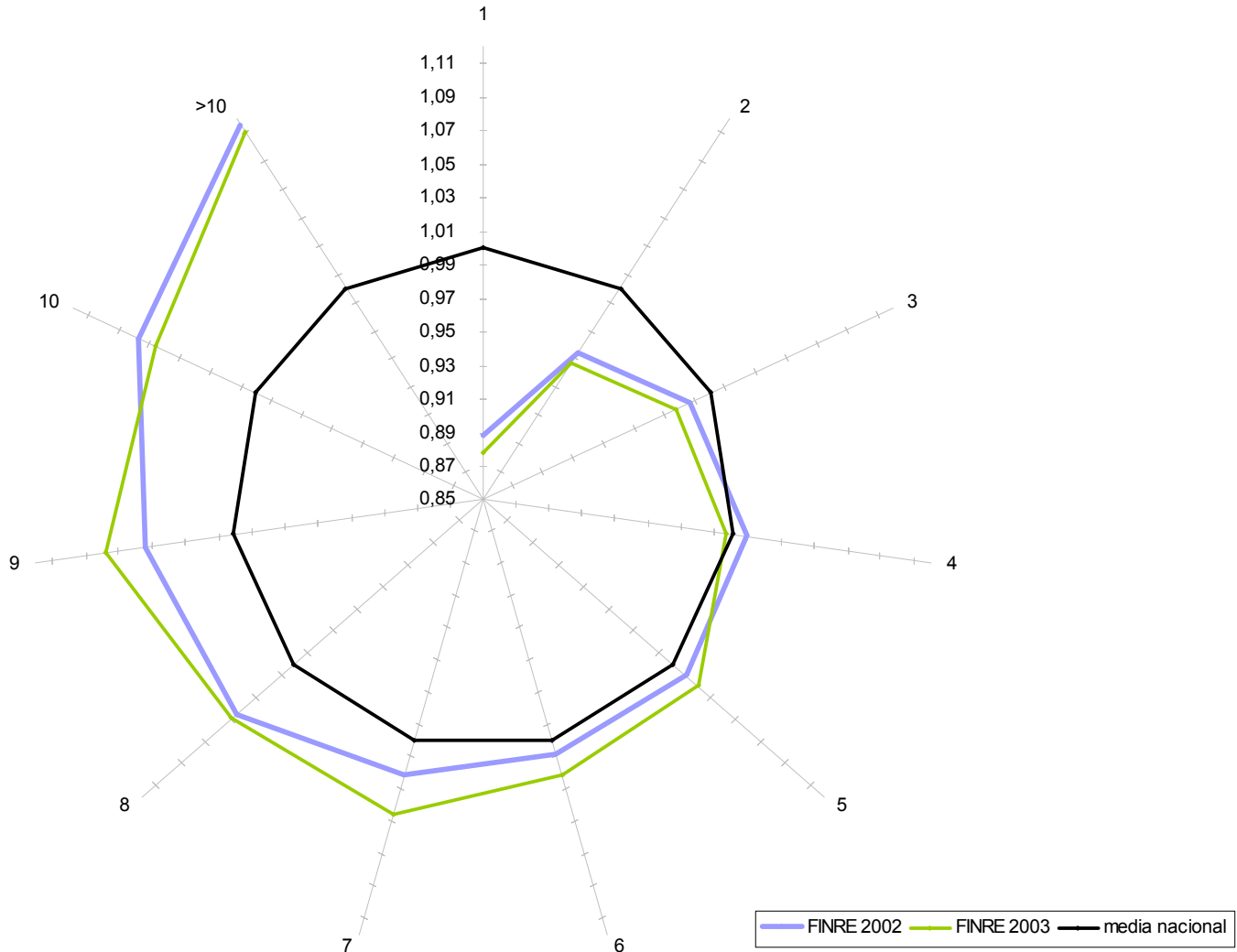


Impacto/Esfuerzo sector CSIC

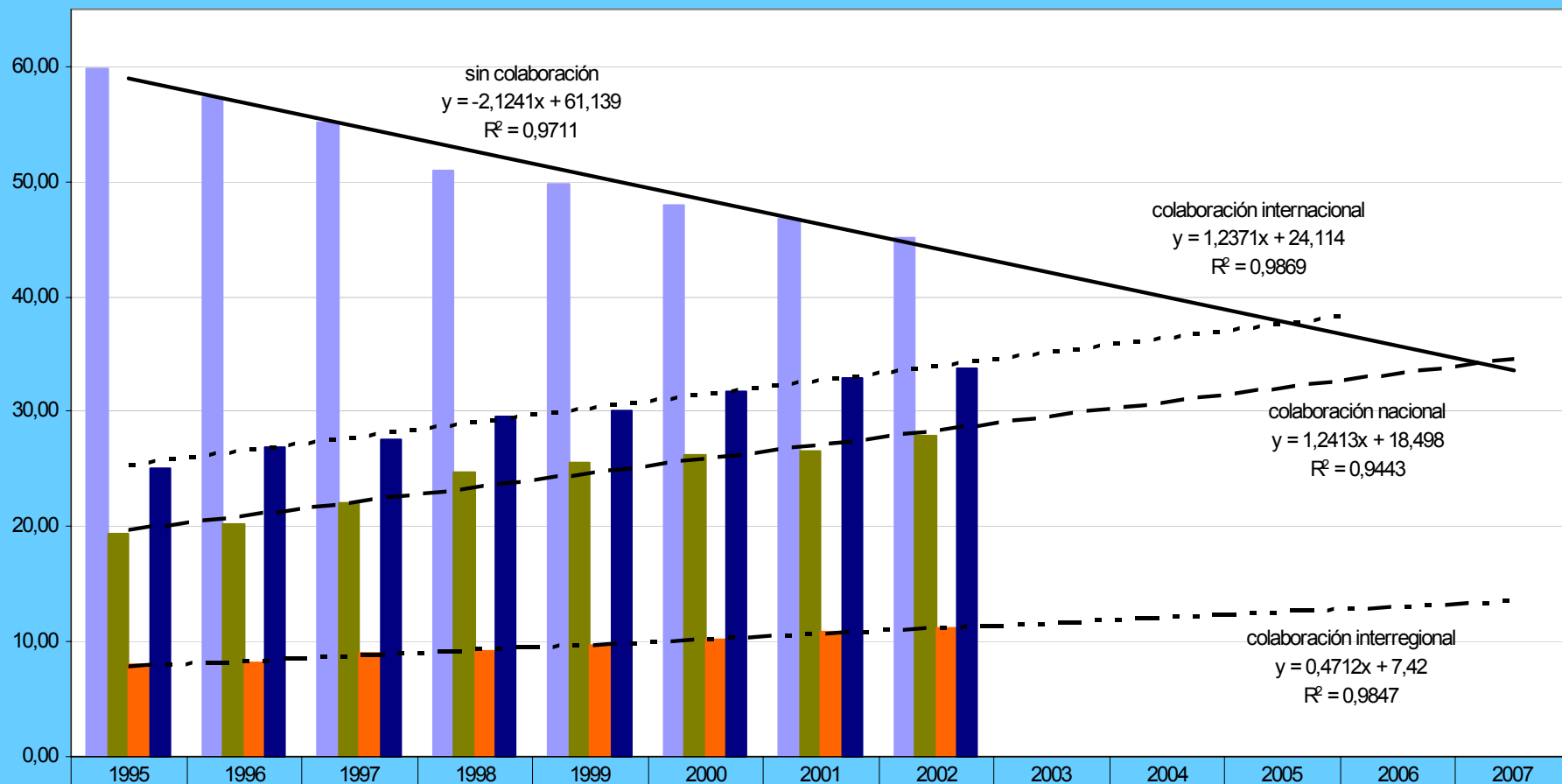
CSIC



Relación impacto/coautoría (España)

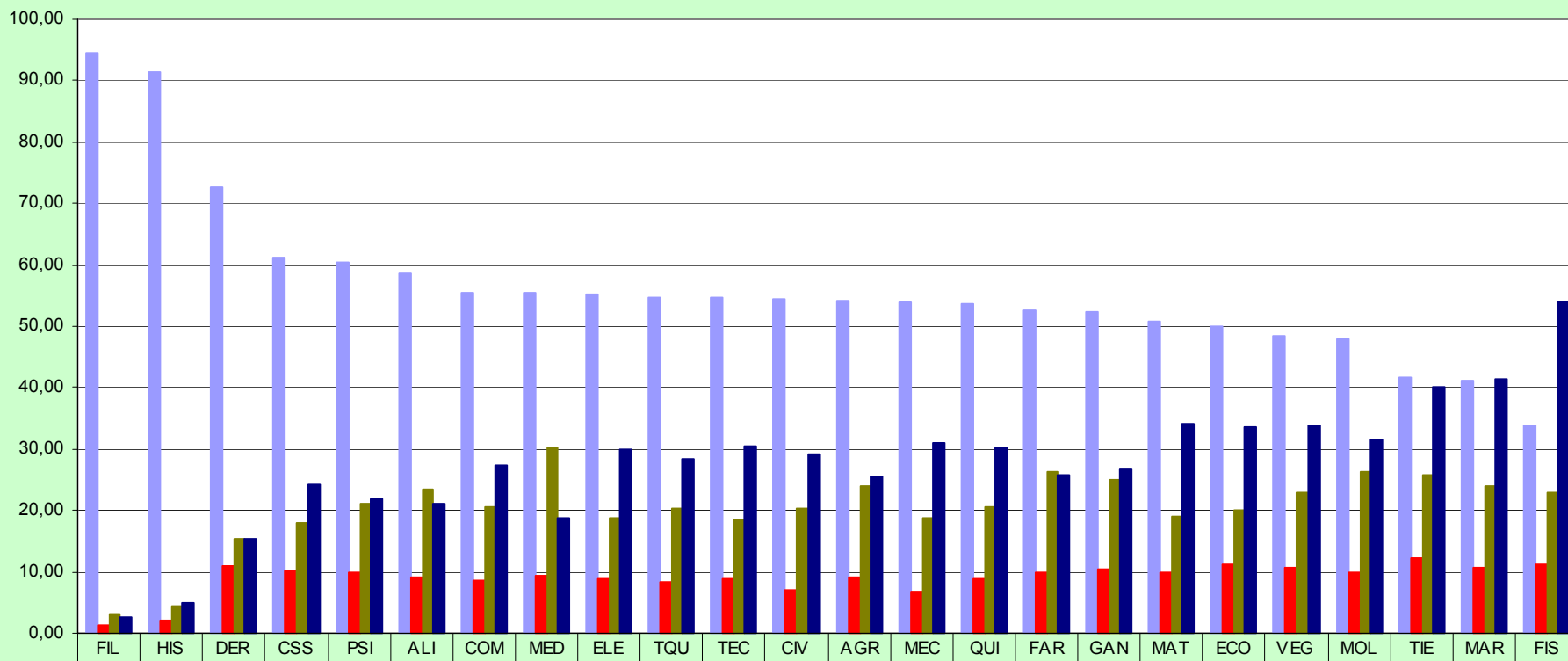


Evolución de los patrones de colaboración (España)



	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
sin	59,84	57,25	55,06	50,95	49,73	47,99	46,77	45,05					
nacional	19,45	20,19	22,06	24,73	25,57	26,19	26,64	27,84					
interregional	8,04	8,13	9,03	9,19	9,73	10,17	10,84	11,19					
internacional	24,98	26,96	27,51	29,57	30,08	31,77	32,90	33,68					

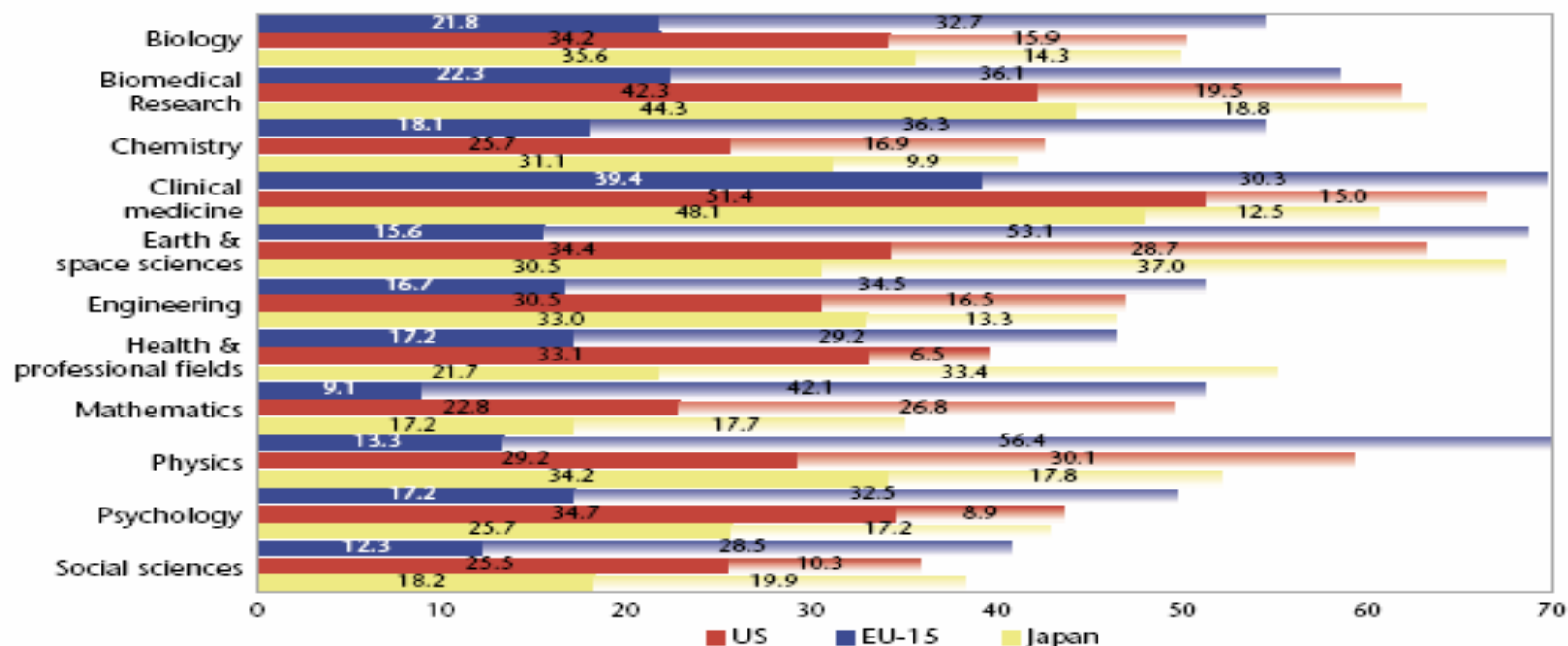
Patrones de colaboración por áreas ANEP (España)



	FIL	HIS	DER	CSS	PSI	ALI	COM	MED	ELE	TQU	TEC	CIV	AGR	MEC	QUI	FAR	GAN	MAT	ECO	VEG	MOL	TIE	MAR	FIS
sin	94,60	91,49	72,53	61,31	60,47	58,53	55,46	55,45	55,09	54,80	54,79	54,32	54,22	53,88	53,69	52,49	52,40	50,74	50,12	48,56	47,95	41,64	41,13	33,75
interregional	1,38	1,96	10,99	10,29	9,77	9,06	8,59	9,48	8,87	8,36	8,87	7,15	9,21	6,76	8,80	9,89	10,49	9,81	11,23	10,56	9,90	12,35	10,68	11,19
nacional	3,10	4,33	15,38	18,08	21,12	23,54	20,57	30,11	18,62	20,32	18,39	20,44	24,03	18,71	20,66	26,38	25,04	18,97	20,05	22,86	26,23	25,67	24,06	23,02
internacional	2,67	4,89	15,38	24,12	21,78	21,03	27,43	18,68	30,03	28,27	30,55	29,23	25,42	30,97	30,20	25,82	26,84	34,13	33,70	33,72	31,59	40,16	41,29	54,01

Colaboración por países y campos científicos

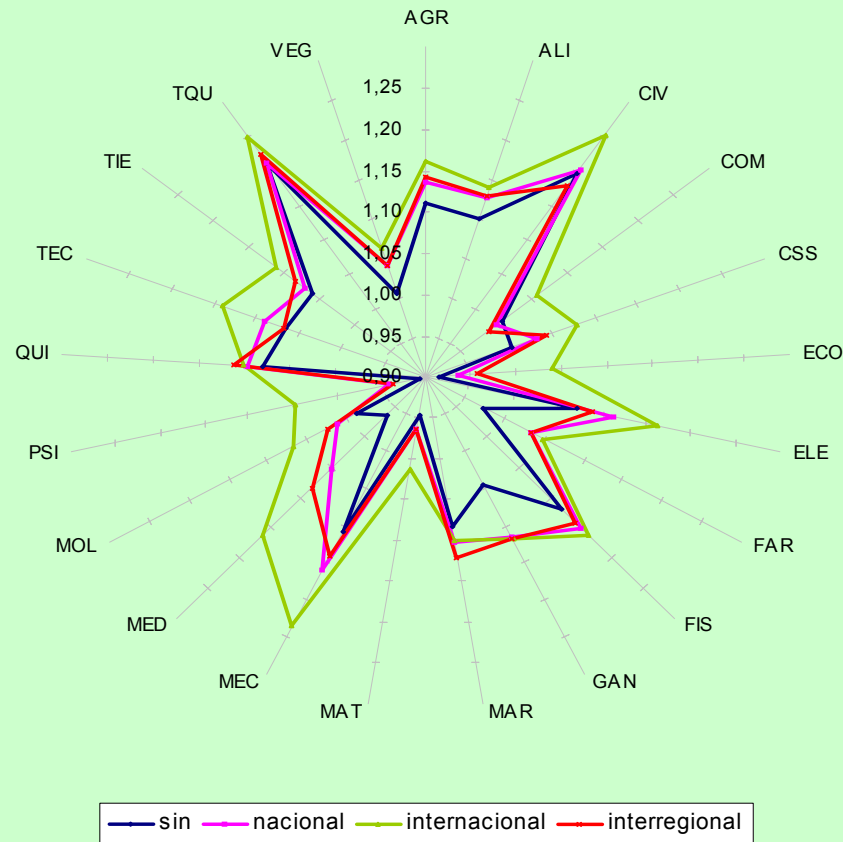
Figure 5.4.3 Domestic and international co-publication shares (%) by EU-15, US and Japan (1995-1999)



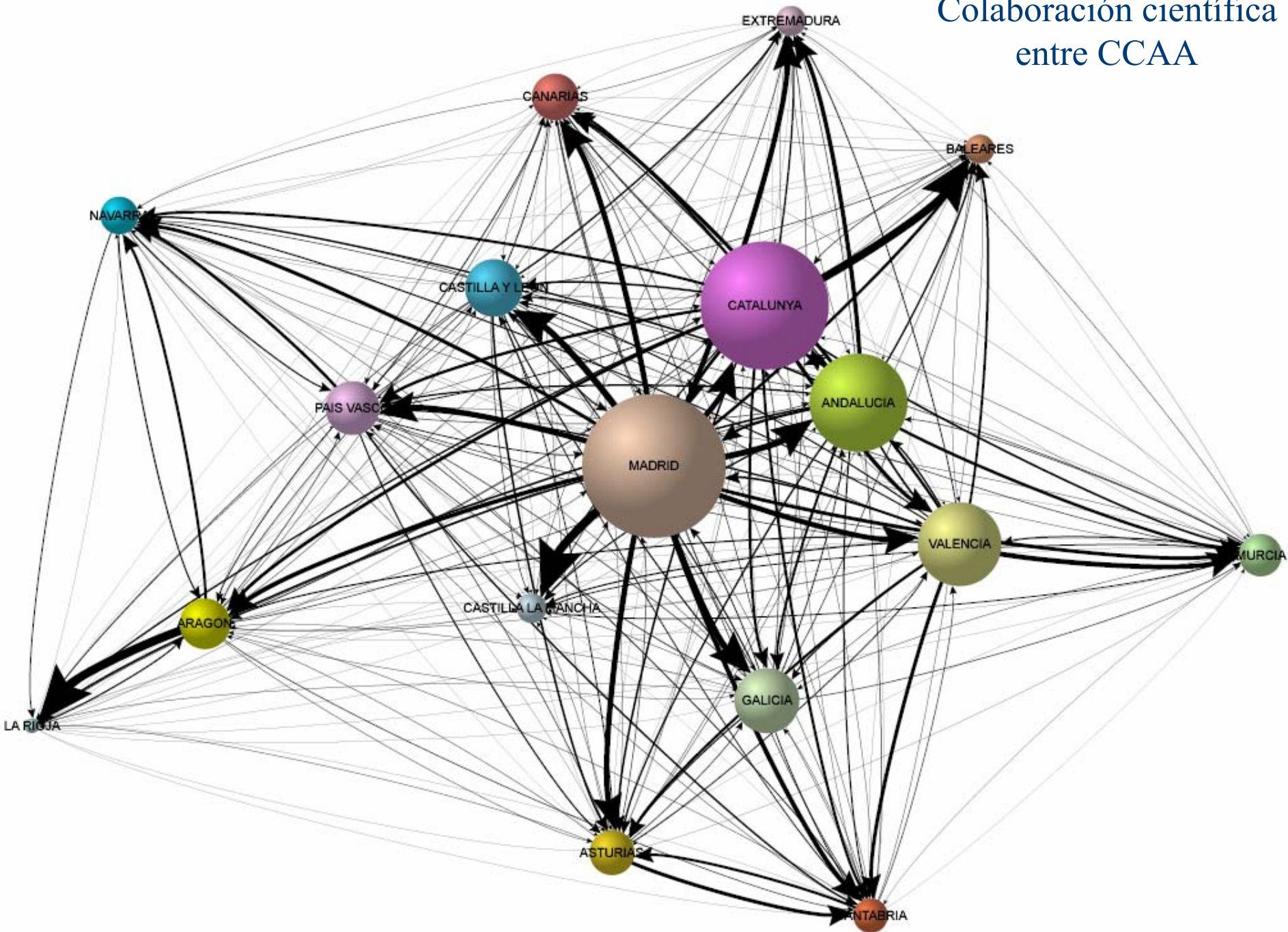
Source: DG Research
 Data: ISI, NSB 2000
 Note:

■ share of domestic co-publications, ■ the internationally co-authored publications by EU-15 (blue), US (red), and Japan (yellow). It should be read as follows: In the field of biology, Europe co-authors 21.8% domestically, i.e., within Europe. 32.7% of publications have a non-European partner involved.

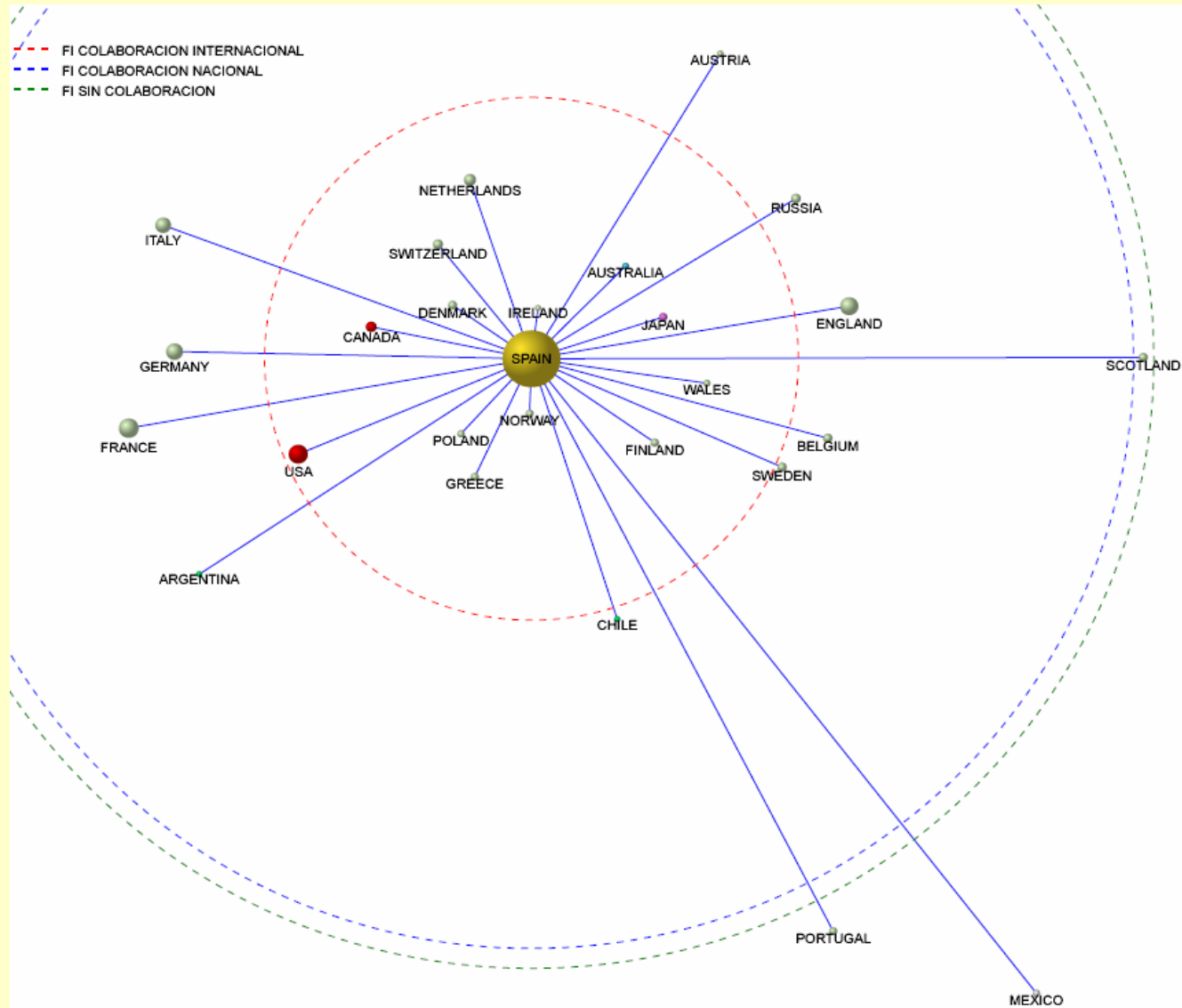
Relación impacto/colaboración (España)



Colaboración científica entre CCAA



Principales países colaboradores . Ciencias de la Tierra



Principales países colaboradores . Fisiología y Farmacología

- - - FI COLABORACION INTERNACIONAL
- - - FI COLABORACION NACIONAL
- - - FI SIN COLABORACION

