

Appendix table 4-13

**Gross expenditures for R&D and expenditures for R&D as share of gross domestic product, for selected countries: 1981–2011**

Year	United States	European Union	France	Germany	United Kingdom	China	Japan	South Korea
GERD, PPP \$billions								
1981	72.7	na	11.0	18.4	12.0	NA	25.6	NA
1982	81.2	na	12.4	20.0	NA	NA	29.2	NA
1983	90.4	na	13.3	21.2	12.9	NA	33.1	NA
1984	102.9	na	14.7	22.6	NA	NA	37.1	NA
1985	115.2	na	15.8	25.6	14.8	NA	42.6	NA
1986	120.6	na	16.4	27.0	15.9	NA	44.3	NA
1987	126.7	na	17.6	29.4	16.6	NA	48.8	NA
1988	134.2	na	19.0	31.4	17.6	NA	54.4	NA
1989	142.2	na	21.0	33.7	18.8	NA	61.4	NA
1990	152.4	na	23.2	35.3	19.6	NA	69.0	NA
1991	161.4	na	24.3	39.5	19.3	7.5	73.3	7.1
1992	165.8	na	25.4	39.2	19.4	8.9	74.6	8.1
1993	166.1	na	26.1	38.4	20.6	9.8	74.8	9.6
1994	169.6	na	26.6	38.6	21.4	10.3	75.7	11.7
1995	184.1	138.1	27.4	40.1	21.9	10.5	82.5	13.3
1996	197.8	143.8	28.1	41.4	22.3	11.7	83.0	14.9
1997	212.7	150.8	28.5	43.2	23.1	14.7	87.8	16.3
1998	226.9	158.6	29.3	45.2	23.9	16.3	91.1	14.6
1999	245.8	170.2	30.8	49.4	25.9	20.6	92.8	15.8
2000	269.5	184.2	33.0	52.3	27.9	27.2	98.7	18.6
2001	280.2	196.3	35.8	54.4	29.2	31.7	103.7	21.3
2002	279.9	206.3	38.2	56.7	30.6	39.6	108.2	22.5
2003	293.9	210.8	36.9	59.4	31.0	47.1	112.2	24.0
2004	305.6	218.6	38.0	61.3	32.0	57.8	117.6	27.9
2005	328.1	230.5	39.2	64.3	34.1	71.1	128.7	30.6
2006	353.3	253.9	41.9	70.1	37.0	86.6	138.3	35.3
2007	380.3	270.9	44.0	74.0	38.7	102.3	147.7	40.7
2008	407.2	294.2	46.5	82.0	39.4	120.7	148.7	43.9
2009	406.0	298.4	49.5	82.4	39.2	154.0	136.0	46.7
2010	409.6	303.8	49.9	86.3	39.5	178.2	139.6	52.8
2011	429.1	320.5	51.9	93.1	39.6	208.2	146.5	59.9
GERD, constant 2005 PPP \$billions								
1981	139.3	na	21.4	35.6	23.7	NA	49.0	NA
1982	146.5	na	22.9	36.5	NA	NA	52.6	NA
1983	157.0	na	23.6	37.2	23.1	NA	57.4	NA
1984	172.2	na	25.1	38.3	NA	NA	62.0	NA
1985	187.1	na	26.2	42.0	25.0	NA	69.1	NA
1986	191.5	na	26.6	43.4	26.2	NA	70.2	NA
1987	195.5	na	27.8	45.9	26.6	NA	75.2	NA
1988	200.2	na	29.0	47.3	27.2	NA	81.0	NA
1989	204.4	na	30.8	48.9	27.9	NA	88.1	NA
1990	210.9	na	32.8	49.4	28.1	NA	95.4	NA
1991	215.7	na	33.2	53.3	26.7	10.0	97.9	9.2
1992	216.5	na	33.8	51.7	26.2	11.5	97.3	10.3
1993	212.2	na	34.1	49.6	27.2	12.5	95.5	11.9
1994	212.2	na	34.0	48.8	27.8	12.8	94.6	14.2
1995	225.6	171.2	34.3	49.7	27.7	12.8	101.0	15.8
1996	237.9	174.3	34.5	50.3	27.4	13.9	99.7	17.3
1997	251.6	179.2	34.1	52.2	27.0	17.3	103.6	18.7
1998	265.4	185.8	34.4	54.1	27.9	18.8	106.3	16.5
1999	283.3	197.2	35.8	58.2	30.0	23.5	106.7	17.6
2000	303.8	208.2	36.9	61.6	31.2	30.4	110.0	20.2
2001	308.9	215.4	38.5	62.6	31.6	34.7	113.1	22.6

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**Gross expenditures for R&D and expenditures for R&D as share of gross domestic product, for selected countries: 1981–2011**

Year	United States	European Union	France	Germany	United Kingdom	China	Japan	South Korea
2002	303.6	220.3	39.5	63.3	32.5	42.6	114.9	23.6
2003	312.2	222.4	38.8	64.0	32.9	49.6	117.9	25.1
2004	315.8	224.7	39.4	63.8	32.6	59.3	120.3	28.3
2005	328.1	230.5	39.2	64.3	34.1	71.1	128.7	30.6
2006	342.3	242.7	40.2	67.6	35.4	83.9	134.8	34.7
2007	358.0	251.9	40.6	69.6	37.4	96.3	139.9	38.9
2008	375.1	263.8	41.4	74.7	37.2	111.2	138.7	41.7
2009	370.7	263.8	42.9	74.4	37.0	140.6	126.9	44.3
2010	369.0	268.4	43.0	76.9	36.7	160.5	128.7	49.4
2011	378.6	276.9	44.0	815.4	36.6	183.1	133.2	55.3
	GERD/GDP (%)							
1981	2.34	na	1.90	2.35	2.35	NA	2.26	NA
1982	2.51	na	1.98	2.42	NA	NA	2.35	NA
1983	2.58	na	2.02	2.43	2.17	NA	2.48	NA
1984	2.64	na	2.11	2.43	NA	NA	2.57	NA
1985	2.75	na	2.17	2.60	2.20	NA	2.69	NA
1986	2.72	na	2.16	2.63	2.22	NA	2.66	NA
1987	2.70	na	2.20	2.74	2.15	NA	2.74	NA
1988	2.65	na	2.19	2.73	2.10	NA	2.75	NA
1989	2.61	na	2.23	2.71	2.11	NA	2.84	NA
1990	2.65	na	2.32	2.61	2.10	NA	2.91	NA
1991	2.72	na	2.32	2.47	2.03	0.73	2.89	1.80
1992	2.64	na	2.33	2.35	1.99	0.74	2.85	1.89
1993	2.51	na	2.36	2.28	2.02	0.70	2.79	2.06
1994	2.41	na	2.31	2.18	1.97	0.64	2.74	2.26
1995	2.50	1.66	2.28	2.19	1.91	0.57	2.87	2.30
1996	2.54	1.66	2.27	2.20	1.83	0.57	2.77	2.36
1997	2.55	1.66	2.19	2.24	1.75	0.64	2.83	2.41
1998	2.58	1.67	2.14	2.28	1.75	0.65	2.96	2.26
1999	2.63	1.72	2.16	2.41	1.82	0.76	2.98	2.17
2000	2.71	1.74	2.15	2.47	1.82	0.90	3.00	2.30
2001	2.72	1.76	2.20	2.47	1.79	0.95	3.07	2.47
2002	2.63	1.77	2.24	2.50	1.80	1.07	3.12	2.40
2003	2.64	1.75	2.18	2.54	1.75	1.13	3.14	2.49
2004	2.58	1.73	2.16	2.50	1.69	1.23	3.13	2.68
2005	2.60	1.73	2.11	2.51	1.72	1.32	3.31	2.79
2006	2.64	1.76	2.11	2.54	1.74	1.39	3.41	3.01
2007	2.71	1.76	2.08	2.53	1.77	1.40	3.46	3.21
2008	2.85	1.83	2.12	2.69	1.78	1.47	3.47	3.36
2009	2.91	1.91	2.27	2.82	1.84	1.70	3.36	3.56
2010	2.83	1.91	2.24	2.80	1.80	1.76	3.25	3.74
2011	2.85	1.94	2.24	2.88	1.77	1.84	3.39	4.03

na = not applicable; NA = not available.

GERD = gross expenditures for R&D; GDP = gross domestic product; PPP = purchasing power parity.

NOTES: Conversions of foreign currencies to U.S. dollars are calculated with each country's GDP implicit price deflator and with OECD purchasing power parity exchange rates. Data for the United States reflect international standards for calculating gross expenditures on R&D, which vary slightly from NSF's protocol for tallying U.S. total R&D. Data for Japan for 1996 onward, many not be consistent with earlier data because of changes in methodology. Data for Germany from 1981 to 1990 are for West Germany.

SOURCES: National Science Foundation, National Center for Science and Engineering Statistics, National Patterns of R&D Resources (annual series); OECD, Main Science and Technology Indicators (2013/1).