

Table DISC-10. GERD, GDP, GERD-to-GDP ratio, and growth rates, by selected region, country, or economy: Selected years, 1990–2022

(Billions of U.S. current PPP dollars and percent)

Region, country, or economy	GERD						GDP						GERD-to-GDP ratio (%)						Longer-term growth rates (CAGR)									
																			GERD					GDP				
	1990	2000	2010	2020	2021	2022	1990	2000	2010	2020	2021	2022	1990	2000	2010	2020	2021	2022	1990–2000	2000–10	2010–20	2010–22	2021–22	1990–2000	2000–10	2010–20	2010–22	2021–22
United States	152.39	268.56	408.50	730.24	821.81	923.24	5,963.14	10,250.95	15,048.97	21,322.95	23,594.03	25,744.11	2.56	2.62	2.71	3.42	3.48	3.59	5.83	4.28	5.98	7.03	12.34	5.57	3.91	3.55	4.58	9.11
China	NA	32.90	212.19	607.60	701.11	811.86	1,114.20	3,683.89	12,381.94	25,246.67	28,821.65	31,773.15	NA	0.89	1.71	2.41	2.43	2.56	NA	20.49	11.09	11.83	15.80	12.70	12.89	7.38	8.17	10.24
Japan	65.44	98.94	140.51	174.93	183.47	200.77	2,458.76	3,461.20	4,525.40	5,358.32	5,599.03	5,895.69	2.66	2.86	3.10	3.26	3.28	3.41	4.22	3.57	2.21	3.02	9.43	3.48	2.72	1.70	2.23	5.30
Germany	35.94	53.89	86.95	150.79	161.23	174.86	1,379.33	2,236.36	3,184.88	4,815.44	5,153.14	5,582.29	2.61	2.41	2.73	3.13	3.13	3.13	4.13	4.90	5.66	5.99	8.45	4.95	3.60	4.22	4.79	8.33
South Korea	NA	18.52	52.15	112.22	123.46	139.00	358.19	871.48	1,572.68	2,340.03	2,514.52	2,667.44	NA	2.13	3.32	4.80	4.91	5.21	NA	10.91	7.97	8.51	12.58	9.30	6.08	4.05	4.50	6.08
United Kingdom (GERD 2021)	19.02	25.15	37.53	94.64	102.61	NA	976.33	1,562.41	2,290.20	3,220.30	3,541.78	3,847.92	1.95	1.61	1.64	2.94	2.90	NA	2.84	4.09	9.69	NA	NA	4.81	3.90	3.47	4.42	8.64
France	23.36	33.27	50.85	76.07	80.92	85.17	1,027.25	1,589.45	2,334.27	3,344.39	3,648.08	3,914.74	2.27	2.09	2.18	2.27	2.22	2.18	3.60	4.33	4.11	4.39	5.25	4.46	3.92	3.66	4.40	7.31
Taiwan	NA	9.15	25.05	47.62	55.74	63.97	204.02	478.13	889.67	1,319.47	1,471.39	1,615.72	NA	1.91	2.82	3.61	3.79	3.96	NA	10.60	6.64	8.13	14.77	8.89	6.41	4.02	5.10	9.81
Russia (GERD 2020)	24.11	10.50	33.08	47.95	NA	NA	1,274.54	1,073.59	3,143.87	4,367.29	4,762.30	NA	1.89	0.98	1.05	1.10	NA	NA	-7.97	12.16	3.78	NA	NA	-1.70	11.34	3.34	NA	NA
Italy	12.69	15.47	25.38	39.58	42.10	43.51	1,056.39	1,541.76	2,083.74	2,627.33	2,950.84	3,295.26	1.20	1.00	1.22	1.51	1.43	1.32	2.00	5.07	4.54	4.59	3.35	3.85	3.06	2.35	3.89	11.67
Turkey	1.08	2.84	10.07	32.70	37.33	43.14	456.73	609.01	1,268.55	2,391.49	2,662.21	3,259.42	0.24	0.47	0.79	1.37	1.40	1.32	10.17	13.51	12.50	12.89	15.56	2.92	7.61	6.55	8.18	22.43
Canada	8.26	16.74	24.89	35.74	39.77	41.35	560.18	901.00	1,363.58	1,847.84	2,133.08	2,415.84	1.48	1.86	1.83	1.93	1.86	1.71	7.32	4.04	3.69	4.32	3.98	4.87	4.23	3.09	4.88	13.26
Spain	4.14	7.73	20.07	26.01	29.19	33.39	531.56	875.74	1,475.43	1,845.71	2,068.30	2,326.11	0.78	0.88	1.36	1.41	1.41	1.44	6.45	10.01	2.63	4.33	14.38	5.12	5.35	2.26	3.87	12.46
Netherlands	5.49	9.09	12.75	24.73	26.93	30.30	286.50	507.62	748.29	1,065.12	1,186.87	1,319.46	1.92	1.79	1.70	2.32	2.27	2.30	5.17	3.45	6.85	7.48	12.52	5.89	3.96	3.59	4.84	11.17
Israel	NA	6.18	8.63	22.01	25.00	29.99	73.02	161.81	223.84	378.29	433.32	498.27	NA	3.82	3.85	5.82	5.77	6.02	NA	3.39	9.82	10.94	19.98	8.28	3.30	5.39	6.90	14.99

NA = not available.

CAGR = compound annual growth rate; GDP = gross domestic product; GERD = gross domestic expenditures on R&D; PPP = purchasing power parity.

Note(s):

The most recent year of GERD data for the United Kingdom was 2021. The most recent year of GERD data for Russia was 2020. Data for U.S. GERD differ slightly from the U.S. total R&D data tabulated elsewhere in this report. For better consistency with international standards, U.S. GERD includes federal capital funding for federal intramural and nonprofit R&D, in addition to what is reported as U.S. total R&D. Some data are preliminary and may be revised later. Foreign currencies are converted by the Organisation for Economic Co-operation and Development (OECD) to U.S. dollars using PPP. U.S. data have been adjusted for international comparability. For more information on GERD and GDP statistics across regions, countries, or economies, see Table SDISC-3.

Source(s):

National Center for Science and Engineering Statistics, National Patterns of R&D Resources (2021–22 edition); OECD, Main Science and Technology Indicators, July 2024, https://stats.oecd.org/Index.aspx?DataSetCode=MSTL_PUB.

Science and Engineering Indicators