



NATIONAL SCIENCE BOARD SCIENCE & ENGINEERING INDICATORS 2022



Industry Activities

Production and Trade of Knowledge- and Technology-Intensive Industries

Supplemental Tables

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This publication is part of the *Science and Engineering Indicators* suite of reports. *Indicators* is a congressionally mandated report on the state of the U.S. science and engineering enterprise. It is policy relevant and policy neutral. *Indicators* is prepared under the guidance of the National Science Board by the National Center for Science and Engineering Statistics, a federal statistical agency within the National Science Foundation. With the 2020 edition, *Indicators* is changing from a single report to a set of disaggregated and streamlined reports published on a rolling basis. Detailed data tables will continue to be available online.

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Table SKTI-1

U.S. KTI industry value added: 2002–20

(Billions of dollars and percent share)

Industry	ISIC, Rev.4, industry code	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Billions of dollars																				
Gross domestic product		10,929.1	11,456.5	12,217.2	13,039.2	13,815.6	14,474.2	14,769.9	14,478.1	15,049.0	15,599.7	16,254.0	16,843.2	17,550.7	18,206.0	18,695.1	19,479.6	20,527.2	21,372.6	20,893.7
All KTI industries		1,052.6	1,096.6	1,152.8	1,202.6	1,294.7	1,350.3	1,376.2	1,356.6	1,484.1	1,570.1	1,622.6	1,709.1	1,782.2	1,883.5	1,960.0	2,058.0	2,209.2	2,336.2	2,387.0
Manufacturing		752.3	784.4	812.5	842.0	909.8	944.7	925.1	891.4	975.7	1,007.7	1,033.5	1,076.6	1,107.0	1,149.3	1,170.2	1,210.8	1,268.3	1,301.7	1,272.8
Chemicals and chemical products	20	110.4	110.1	121.1	119.2	135.9	144.8	141.6	144.2	172.1	175.5	181.0	188.4	190.1	185.6	198.6	200.8	210.3	208.6	199.5
Pharmaceuticals	21	97.4	100.6	105.7	103.8	117.9	123.1	124.1	143.8	131.2	130.5	124.0	133.1	140.0	147.6	158.4	162.1	165.5	182.4	195.1
Computer, electronic, and optical products	26	174.1	194.7	202.8	212.5	225.6	230.1	234.1	225.5	242.1	239.8	243.4	246.8	253.4	269.5	270.2	282.0	307.0	310.1	319.6
Electrical equipment	27	43.7	45.5	42.1	43.2	51.4	50.3	55.5	50.6	50.8	48.3	52.2	58.1	54.4	63.7	58.5	60.8	65.1	65.0	63.6
Machinery and equipment nec	28	99.3	98.0	105.0	115.2	122.7	130.3	132.9	119.2	127.8	145.3	152.6	157.9	161.0	152.5	143.8	153.4	161.4	167.0	156.9
Motor vehicles, trailers, and semi-trailers	29	126.7	134.3	130.4	127.5	125.9	116.4	83.6	44.2	83.4	98.0	108.7	115.4	124.6	137.6	146.2	149.1	148.2	149.4	145.9
Air and spacecraft and related machinery	303	57.7	56.7	58.9	71.2	77.2	92.4	90.5	95.4	99.5	103.6	102.8	107.8	114.9	124.4	121.6	129.2	134.9	142.3	108.1
Railroad, military vehicles, and transport nec	302, 304, and 309	7.9	8.3	8.9	10.0	10.5	12.6	14.7	12.4	12.0	13.3	13.2	14.3	13.7	13.4	14.3	11.9	11.7	11.3	11.6
Medical and dental instruments	325	34.9	36.2	37.6	39.5	42.7	44.7	48.1	56.1	57.0	53.5	55.7	54.8	54.9	55.0	58.8	61.6	64.3	65.7	72.4
Services		300.3	312.1	340.3	360.6	384.8	405.5	451.1	465.2	508.3	562.4	589.1	632.6	675.3	734.2	789.8	847.1	940.9	1,034.5	1,114.2
IT and other information services	62 - 63	171.4	178.9	197.1	206.8	230.9	232.3	264.2	275.1	304.0	339.6	358.1	386.9	415.5	454.7	500.1	535.3	596.5	655.8	684.9
Software publishing	582	57.5	61.9	70.7	79.2	79.0	98.8	103.3	105.0	115.2	128.0	135.4	147.9	156.6	164.1	176.2	195.1	215.9	239.3	273.0
Scientific research and development	72	71.5	71.3	72.5	74.6	75.0	74.4	83.5	85.0	89.2	94.7	95.6	97.8	103.1	115.4	113.5	116.7	128.6	139.3	156.3
Industry share of total KTI value added																				
All KTI industries		100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Manufacturing		71.5	71.5	70.5	70.0	70.3	70.0	67.2	65.7	65.7	64.2	63.7	63.0	62.1	61.0	59.7	58.8	57.4	55.7	53.3
Chemicals and chemical products	20	10.5	10.0	10.5	9.9	10.5	10.7	10.3	10.6	11.6	11.2	11.2	11.0	10.7	9.9	10.1	9.8	9.5	8.9	8.4
Pharmaceuticals	21	9.3	9.2	9.2	8.6	9.1	9.1	9.0	10.6	8.8	8.3	7.6	7.8	7.9	7.8	8.1	7.9	7.5	7.8	8.2
Computer, electronic, and optical products	26	16.5	17.8	17.6	17.7	17.4	17.0	17.0	16.6	16.3	15.3	15.0	14.4	14.2	14.3	13.8	13.7	13.9	13.3	13.4
Electrical equipment	27	4.2	4.2	3.6	3.6	4.0	3.7	4.0	3.7	3.4	3.1	3.2	3.4	3.1	3.4	3.0	3.0	2.9	2.8	2.7
Machinery and equipment nec	28	9.4	8.9	9.1	9.6	9.5	9.7	9.7	8.8	8.6	9.3	9.4	9.2	9.0	8.1	7.3	7.5	7.3	7.1	6.6

Table SKTI-1

U.S. KTI industry value added: 2002–20

(Billions of dollars and percent share)

Industry	ISIC, Rev.4, industry code	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Motor vehicles, trailers, and semi-trailers	29	12.0	12.2	11.3	10.6	9.7	8.6	6.1	3.3	5.6	6.2	6.7	6.8	7.0	7.3	7.5	7.2	6.7	6.4	6.1
Air and spacecraft and related machinery	303	5.5	5.2	5.1	5.9	6.0	6.8	6.6	7.0	6.7	6.6	6.3	6.3	6.4	6.6	6.2	6.3	6.1	6.1	4.5
Railroad, military vehicles, and transport nec	302, 304, and 309	0.7	0.8	0.8	0.8	0.8	0.9	1.1	0.9	0.8	0.8	0.8	0.8	0.8	0.7	0.7	0.6	0.5	0.5	0.5
Medical and dental instruments	325	3.3	3.3	3.3	3.3	3.3	3.3	3.5	4.1	3.8	3.4	3.4	3.2	3.1	2.9	3.0	3.0	2.9	2.8	3.0
Services		28.5	28.5	29.5	30.0	29.7	30.0	32.8	34.3	34.3	35.8	36.3	37.0	37.9	39.0	40.3	41.2	42.6	44.3	46.7
IT and other information services	62 - 63	16.3	16.3	17.1	17.2	17.8	17.2	19.2	20.3	20.5	21.6	22.1	22.6	23.3	24.1	25.5	26.0	27.0	28.1	28.7
Software publishing	582	5.5	5.6	6.1	6.6	6.1	7.3	7.5	7.7	7.8	8.2	8.3	8.7	8.8	8.7	9.0	9.5	9.8	10.2	11.4
Scientific research and development	72	6.8	6.5	6.3	6.2	5.8	5.5	6.1	6.3	6.0	6.0	5.9	5.7	5.8	6.1	5.8	5.7	5.8	6.0	6.5

ISIC, Rev.4 = International Standard Industry Classification, Revision 4; IT = information technology; KTI = knowledge and technology intensive; nec = not elsewhere classified.

Note(s):

Value added is a net measure of output; it is the difference between the value of goods and services produced by an industry (gross output) and the total cost of intermediate inputs that were used in production including energy, materials, and services purchased from other businesses. *Industry value added* is a measure of an industry's contribution to overall gross domestic product. KTI industries include high R&D intensive and medium-high R&D intensive industries based on a classification by the Organisation for Economic Co-operation and Development. The data have been crosswalked to the ISIC, Rev.4, classification. See the [Technical Appendix](#) for the crosswalking method.

Source(s):

U.S. Bureau of Economic Analysis, Value Added by Industry, accessed 5 October 2021.

Science and Engineering Indicators

Table SKTI-2

Employment in KTI industries, by workforce and education: 2019

(Thousands)

Industry	ISIC, Rev.4, industry code	Total	STEM without bachelor's degree (STW)	STEM with bachelor's degree or above	Non-STEM
All industries (including KTI industries)		155,423	19,853	16,241	119,329
All KTI industries		11,667	2,243	3,427	5,997
Manufacturing		7,062	1,568	1,432	4,062
Chemicals and chemical products	20	852	266	136	451
Pharmaceuticals	21	536	85	167	284
Computer, electronic, and optical products	26	1,169	214	357	598
Electrical equipment	27	435	89	60	286
Machinery and equipment nec	28	1,122	289	146	686
Motor vehicles, trailers, and semi-trailers	29	1,428	314	185	929
Air and spacecraft and related machinery	303	820	190	250	380
Railroad, military vehicles, and transport nec	302, 304, and 309	66	12	8	45
Medical and dental instruments	325	634	109	122	402
Services		4,605	675	1,995	1,935
IT and other information services	62 - 63	3,767	593	1,586	1,588
Software publishing	582	131	11	54	65
Scientific research and development	72	708	71	355	282

ISIC, Rev.4 = International Standard Industry Classification, Revision 4; IT = information technology; KTI = knowledge and technology intensive; nec = not elsewhere classified; STEM = science, technology, engineering, and mathematics; STW = skilled technical workforce.

Note(s):

KTI industries include high R&D intensive and medium-high R&D intensive industries based on a classification by the Organisation for Economic Co-operation and Development. Data include workers ages 16–75 and exclude those in military occupations or currently enrolled in primary or secondary school. Values are rounded to the nearest thousand.

Source(s):

U.S. Census Bureau, American Community Survey (ACS), 2019, Public Use Microdata Sample (PUMS), accessed 12 December 2020.

Science and Engineering Indicators

Table SKTI-3

Employment in each workforce and KTI industry, by sex, race or ethnicity, and nativity and citizenship: 2019

(Thousands)

Workforce and industry	ISIC, Rev.4, industry code	Total	Sex		Race or ethnicity		Nativity			
			Male	Female	Not underrepresented minority	Underrepresented minority	U.S.-born	Foreign-born		
								Total	Non-U.S. citizens	U.S. citizens
All KTI workers		11,667	7,918	3,749	9,413	2,254	9,190	2,477	1,140	1,337
Chemicals and chemical products	20	852	601	251	633	219	718	134	62	72
Pharmaceuticals	21	536	286	250	417	119	398	138	46	93
Computer, electronic, and optical products	26	1,169	814	355	971	198	820	349	140	209
Electrical equipment	27	435	302	133	330	105	357	78	34	44
Machinery and equipment nec	28	1,122	861	261	886	236	970	152	68	85
Motor vehicles, trailers, and semi-trailers	29	1,428	1,035	393	1,044	384	1,245	183	99	84
Air and spacecraft and related machinery	303	820	622	198	645	175	681	139	38	102
Railroad, military vehicles, and transport nec	302, 304, and 309	66	51	15	53	13	60	6	3	3
Medical and dental instruments	325	634	367	267	500	133	486	148	52	96
IT and other information services	62 - 63	3,767	2,524	1,242	3,211	556	2,812	954	515	439
Software publishing	582	131	87	44	117	13	98	32	16	16
Scientific research and development	72	708	368	340	605	103	545	163	68	94
STEM workers		5,670	4,435	1,236	4,748	923	4,224	1,446	710	736
Chemicals and chemical products	20	401	314	88	301	101	334	67	30	37
Pharmaceuticals	21	252	153	99	196	56	177	74	24	50
Computer, electronic, and optical products	26	571	472	99	490	81	383	189	78	110
Electrical equipment	27	149	126	23	121	29	119	30	14	16
Machinery and equipment nec	28	436	386	49	361	74	377	58	25	34
Motor vehicles, trailers, and semi-trailers	29	499	413	86	407	92	427	72	37	34
Air and spacecraft and related machinery	303	440	372	68	358	82	367	73	20	53
Railroad, military vehicles, and transport nec	302, 304, and 309	21	19	2	18	3	19	2	1	1
Medical and dental instruments	325	232	162	69	189	43	174	58	19	39
IT and other information services	62 - 63	2,179	1,716	463	1,876	303	1,493	686	399	287
Software publishing	582	65	50	15	60	5	44	21	12	9
Scientific research and development	72	426	251	175	372	54	311	115	50	65
Non-STEM workers		5,997	3,484	2,513	4,665	1,331	4,966	1,031	430	601
Chemicals and chemical products	20	451	287	164	333	118	384	66	31	35
Pharmaceuticals	21	284	133	151	221	63	220	64	22	42
Computer, electronic and optical products	26	598	342	256	480	117	437	160	62	99
Electrical equipment	27	286	176	110	209	77	238	48	20	28
Machinery and equipment nec	28	686	475	212	525	161	593	94	43	51
Motor vehicles, trailers, and semi-trailers	29	929	622	307	638	292	818	111	62	49

Table SKTI-3

Employment in each workforce and KTI industry, by sex, race or ethnicity, and nativity and citizenship: 2019

(Thousands)

Workforce and industry	ISIC, Rev.4, industry code	Total	Sex		Race or ethnicity		Nativity			
			Male	Female	Not underrepresented minority	Underrepresented minority	U.S.-born	Foreign-born		
								Total	Non-U.S. citizens	U.S. citizens
Air and spacecraft and related machinery	303	380	250	130	287	94	314	66	18	48
Railroad, military vehicles, and transport nec	302, 304, and 309	45	32	13	36	9	41	4	3	2
Medical and dental instruments	325	402	204	197	311	90	312	90	33	57
IT and other information services	62 - 63	1,588	808	780	1,335	253	1,319	268	116	153
Software publishing	582	65	36	29	57	8	54	11	4	7
Scientific research and development	72	282	117	165	233	49	234	48	18	29

ISIC, Rev.4 = International Standard Industry Classification, Revision 4; IT = information technology; KTI = knowledge and technology intensive; nec = not elsewhere classified; STEM = science, technology, engineering, and mathematics.

Note(s):

KTI industries include high R&D intensive and medium-high R&D intensive industries based on a classification by the Organisation for Economic Co-operation and Development. Data include workers ages 16–75 and exclude those in military occupations or currently enrolled in primary or secondary school. Values are rounded to the nearest thousand. Underrepresented minorities are Blacks or African Americans, Hispanics or Latinos, and American Indians or Alaska Natives.

Source(s):

U.S. Census Bureau, American Community Survey (ACS), 2019, Public Use Microdata Sample (PUMS), accessed 12 December 2020.

Science and Engineering Indicators

Table SKTI-4

Regions, countries, or economies in world industry data

(Regions, countries, or economies)

North America	Central and South America	Europe	Middle East	Africa	Asia	Oceania
Canada	Argentina	EU	Bahrain	Cameroon	Bangladesh	Australia
Mexico	Bolivia	Austria	Iran	Egypt	China	New Zealand
United States	Brazil	Belgium	Israel	Ghana	India	
	Chile	Bulgaria	Jordan	Kenya	Indonesia	
	Colombia	Czechia	Kuwait	Morocco	Japan	
	Costa Rica	Denmark	Oman	Nigeria	Malaysia	
	Ecuador	Finland	Qatar	Senegal	Pakistan	
	Honduras	France	Saudi Arabia	South Africa	Philippines	
	Jamaica	Germany	United Arab Emirates	Tunisia	Singapore	
	Panama	Greece		Zimbabwe	South Korea	
	Peru	Hungary			Sri Lanka	
	Uruguay	Ireland			Taiwan	
	Venezuela	Italy			Thailand	
		Netherlands			Vietnam	
		Poland				
		Portugal				
		Romania				
		Slovakia				
		Spain				
		Sweden				
		Other Europe				
		United Kingdom				
		Norway				
		Russia				
		Switzerland				
		Turkey				
		Ukraine				

EU = European Union.

Note(s):

The United Kingdom withdrew from the EU on 1 February 2020.

Source(s):

IHS Markit, Comparative Industry Service.

Science and Engineering Indicators

Table SKTI-5

Value added of KTI industries, by region, country, or economy: 2002–19

(Millions of current dollars)

Region, country, or economy	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
World	3,406,829	3,808,291	4,238,871	4,495,366	4,863,257	5,476,675	5,923,813	5,515,989	6,281,367	7,007,796	7,132,815	7,382,920	7,719,493	7,577,690	7,836,128	8,443,668	9,142,475	9,220,040
North America	1,176,378	1,220,952	1,283,585	1,343,229	1,450,805	1,515,863	1,540,119	1,492,324	1,648,153	1,752,332	1,817,755	1,907,556	1,982,823	2,075,154	2,145,937	2,255,915	2,416,098	2,548,477
Canada	61,696	69,031	73,846	79,299	85,502	92,073	88,842	79,476	93,719	105,631	109,030	108,638	106,558	96,457	95,704	101,256	105,579	106,698
Mexico	62,089	55,365	56,930	61,333	70,649	73,515	75,045	56,251	70,341	76,568	86,124	89,773	94,050	95,152	90,220	96,697	101,316	105,611
United States	1,052,593	1,096,557	1,152,809	1,202,597	1,294,654	1,350,275	1,376,232	1,356,596	1,484,094	1,570,133	1,622,602	1,709,144	1,782,215	1,883,545	1,960,012	2,057,962	2,209,203	2,336,168
Central and South America	67,788	72,766	90,967	111,403	133,005	169,657	211,527	194,792	243,337	280,463	265,521	267,392	243,270	197,445	176,494	208,738	195,417	184,303
Argentina	6,267	7,835	10,004	12,410	15,021	19,113	24,593	23,805	28,101	31,891	32,433	32,643	25,079	26,010	24,401	28,542	24,428	21,210
Brazil	42,151	45,782	58,509	72,081	87,687	114,204	143,195	124,659	169,438	196,121	173,052	173,671	160,541	111,958	107,586	130,061	115,770	113,737
Chile	2,624	3,124	3,819	4,894	5,249	5,685	6,151	5,918	6,919	8,628	9,574	9,692	8,345	7,843	8,086	8,361	8,780	7,902
Colombia	5,057	4,944	6,077	7,515	8,489	10,771	12,304	11,938	14,483	15,904	17,635	17,970	17,925	14,429	13,705	14,432	15,283	14,471
Peru	2,385	2,485	2,686	3,017	3,428	4,060	4,979	5,065	5,805	6,489	7,489	7,916	7,744	7,105	7,168	7,701	8,011	7,949
Other Central and South America	9,304	8,595	9,873	11,486	13,131	15,825	20,304	23,407	18,592	21,430	25,338	25,500	23,635	30,100	15,549	19,640	23,145	19,034
Europe	1,031,376	1,230,526	1,412,474	1,471,475	1,588,999	1,861,509	2,009,293	1,681,827	1,796,918	2,020,187	1,921,252	2,030,357	2,108,709	1,900,432	1,947,506	2,066,614	2,246,564	2,175,012
EU	795,126	957,997	1,091,518	1,123,828	1,209,369	1,416,654	1,528,153	1,303,882	1,373,141	1,529,246	1,426,234	1,513,895	1,585,450	1,448,503	1,512,169	1,611,839	1,757,716	1,673,822
France	140,823	166,137	185,411	187,047	195,849	222,046	240,014	216,099	212,048	227,227	215,292	228,178	235,149	204,963	209,763	221,126	236,747	230,245
Germany	284,268	346,736	394,449	402,153	435,122	513,637	543,749	444,945	499,686	576,710	544,391	578,676	619,645	540,298	570,154	606,793	655,962	593,723
Italy	107,478	128,425	145,619	147,259	156,962	181,523	195,654	168,429	172,258	183,486	166,539	173,836	174,481	155,024	163,615	173,925	184,823	174,193
Spain	47,718	59,205	67,360	69,360	75,374	86,138	95,392	84,698	77,083	81,772	72,983	79,093	82,442	70,541	72,398	78,106	85,808	82,379
Other EU	214,838	257,494	298,678	318,009	346,061	413,310	453,343	389,711	412,065	460,052	427,029	454,113	473,732	477,677	496,239	531,889	594,376	593,283
Non-EU	236,250	272,529	320,957	347,648	379,631	444,855	481,140	377,945	423,778	490,942	495,018	516,462	523,259	451,928	435,337	454,775	488,848	501,189
United Kingdom	149,557	170,057	195,096	201,833	212,062	238,354	227,070	180,149	195,329	211,897	210,363	214,607	236,796	228,401	211,633	216,078	238,649	240,755
Russia	22,362	26,002	37,228	47,419	59,821	79,587	104,859	66,800	83,694	108,645	118,015	124,589	111,060	61,512	60,373	69,912	73,316	78,565
Switzerland	43,510	50,142	56,715	60,187	64,846	72,693	84,338	79,455	85,919	103,207	98,315	103,229	106,178	101,153	102,612	104,171	111,687	112,912
Other non-EU	20,822	26,327	31,918	38,209	42,902	54,221	64,873	51,541	58,837	67,192	68,325	74,037	69,224	60,863	60,719	64,615	65,195	68,958
Middle East	40,131	44,571	51,211	57,606	68,628	88,976	104,987	106,156	117,257	140,161	131,830	133,104	147,468	144,504	148,260	161,613	164,096	162,812
Iran	8,873	10,807	13,117	14,477	18,976	24,660	28,358	33,460	36,063	47,567	25,438	22,537	29,348	29,226	34,133	37,725	29,395	26,949
Israel	15,057	15,726	16,432	17,869	19,773	22,870	26,757	27,146	29,172	31,804	35,455	37,794	41,209	42,078	42,212	46,361	49,474	53,419
Saudi Arabia	7,183	7,742	8,866	10,044	11,516	15,970	18,568	19,291	22,952	25,206	28,893	31,459	34,009	36,583	36,607	39,765	46,553	41,197
United Arab Emirates	5,485	6,195	7,359	8,813	11,270	13,768	16,017	12,853	13,763	14,829	16,530	17,459	18,521	18,174	18,215	19,501	19,136	21,971
Other Middle East	3,533	4,101	5,437	6,403	7,092	11,708	15,287	13,405	15,308	20,755	25,514	23,855	24,380	18,443	17,093	18,262	19,537	19,275
Africa	18,605	23,840	29,815	35,024	36,035	40,729	47,046	46,171	52,796	55,526	58,705	59,666	60,691	56,881	54,745	54,585	60,138	66,674
Egypt	2,402	1,965	2,439	2,919	3,279	4,047	5,068	5,659	6,448	8,289	9,759	9,106	8,860	9,839	9,560	8,848	10,463	13,213
Nigeria	1,451	1,637	2,965	4,949	6,056	7,580	12,249	11,336	12,518	12,205	14,337	16,526	17,980	16,391	13,465	11,637	12,882	15,525
South Africa	8,820	13,167	16,534	18,128	16,705	17,507	16,670	16,618	20,052	20,299	20,178	18,621	18,027	16,669	16,133	17,252	18,266	18,448
Other Africa	5,932	7,072	7,877	9,028	9,995	11,595	13,060	12,558	13,777	14,733	14,430	15,413	15,823	13,982	15,586	16,848	18,527	19,489

Table SKTI-5

Value added of KTI industries, by region, country, or economy: 2002–19

(Millions of current dollars)

Region, country, or economy	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Asia	1,042,899	1,177,461	1,325,451	1,427,346	1,533,261	1,735,204	1,942,578	1,928,440	2,340,753	2,661,731	2,837,379	2,890,590	3,085,565	3,126,217	3,282,924	3,607,296	3,973,771	4,000,860
China	223,183	264,874	298,430	353,666	429,605	548,489	710,399	767,923	947,452	1,156,069	1,298,708	1,458,553	1,602,356	1,676,009	1,730,058	1,946,541	2,225,535	2,267,431
India	30,006	35,578	43,825	52,621	59,993	76,369	82,877	90,285	111,275	133,794	125,525	127,899	142,357	159,926	169,292	193,747	209,861	220,838
Indonesia	14,879	18,488	19,879	19,735	21,849	27,647	34,867	34,533	43,455	50,621	52,241	57,098	56,146	56,654	59,310	63,526	61,371	64,395
Japan	566,695	625,109	683,130	688,609	665,739	683,719	736,620	680,676	788,281	819,298	838,763	690,239	669,474	637,889	707,981	706,840	720,063	730,292
Malaysia	14,306	16,222	18,937	18,012	20,839	22,419	23,682	18,897	24,936	28,244	31,314	32,381	33,418	32,280	32,912	33,741	37,659	39,059
Philippines	5,661	5,266	5,923	6,329	7,280	9,449	8,914	9,681	10,421	11,518	12,763	11,158	12,569	12,422	13,647	14,316	15,235	15,138
Singapore	16,329	17,245	22,393	24,153	29,101	32,222	28,726	29,114	38,495	43,674	44,804	43,988	46,179	44,940	46,079	53,186	71,408	66,172
South Korea	102,269	114,248	139,708	161,398	184,571	209,277	184,571	174,568	227,534	260,083	268,372	291,021	317,216	297,340	304,320	350,462	376,836	341,172
Taiwan	49,260	56,284	64,532	70,039	74,816	80,484	81,207	74,737	93,921	100,798	104,146	112,462	128,137	130,135	134,784	149,555	152,402	148,262
Thailand	13,494	16,172	18,802	20,983	24,518	29,247	32,899	28,914	33,301	32,914	34,066	35,489	36,265	37,220	38,431	40,932	44,279	45,722
Vietnam	1,563	1,774	2,170	2,659	3,426	4,511	5,581	7,057	7,721	8,521	10,281	13,038	22,209	20,694	23,765	29,333	33,624	37,056
Other Asia	5,253	6,203	7,720	9,140	11,525	11,372	12,234	12,054	13,961	16,196	16,394	17,263	19,240	20,708	22,345	25,118	25,499	25,325
Oceania	29,652	38,174	45,368	49,282	52,523	64,738	68,265	66,280	82,152	97,396	100,373	94,254	90,968	77,058	80,262	88,907	86,390	81,902
Australia	26,877	34,672	41,197	44,685	48,312	59,291	63,454	61,671	76,733	91,262	93,945	87,368	83,762	70,660	73,494	81,588	79,113	74,797
New Zealand	2,775	3,502	4,170	4,597	4,212	5,446	4,810	4,609	5,419	6,135	6,427	6,886	7,206	6,397	6,767	7,320	7,277	7,105

EU = European Union; KTI = knowledge and technology intensive; nec = not elsewhere classified.

Note(s):

Value added is the amount contributed by a country, an industry, or other entity to the value of a good or service and excludes purchases of domestic and imported materials and inputs. KTI industries include high R&D intensive and medium-high R&D intensive industries based on a classification by the Organisation for Economic Co-operation and Development. High R&D intensive industries include air and spacecraft and related machinery; pharmaceuticals; computer, electronic, and optical products; scientific research and development; and software publishing. Medium-high R&D intensive industries include motor vehicles, trailers, and semi-trailers; medical and dental instruments; machinery and equipment nec; chemicals and chemical products; electrical equipment; railroad, military vehicles, and transport nec; and information technology and other information services. Detail may not add to total because of rounding. The world total and regional totals do not include all countries and economies due to limitations in data availability. See [Table SKTI-4](#) for a full list of countries and economies in each region for which data are available. China includes Hong Kong. The EU total excludes the United Kingdom (UK) to reflect the new EU country composition following the UK's withdrawal on 1 February 2020. In order to maintain consistency over time, the EU aggregate excludes the UK for the entire time series.

Source(s):

U.S. Bureau of Economic Analysis, Value Added by Industry, accessed 5 October 2021; IHS Markit, special tabulations (2021) of the Comparative Industry Service.

Science and Engineering Indicators

Table SKTI-6

Value added of KTI manufacturing industries, by region, country, or economy: 2002–19

(Millions of current dollars)

Region, country, or economy	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
World	2,576,987	2,883,573	3,197,869	3,374,917	3,651,713	4,095,900	4,384,975	3,989,644	4,623,515	5,134,356	5,199,948	5,339,575	5,548,016	5,450,753	5,603,086	6,018,099	6,479,750	6,407,464
North America	860,992	891,025	923,070	959,644	1,039,434	1,080,127	1,057,101	996,021	1,104,433	1,149,907	1,187,451	1,232,625	1,264,602	1,302,114	1,316,560	1,365,358	1,428,716	1,464,965
Canada	49,044	53,665	56,206	59,256	61,963	65,161	60,421	51,445	61,895	69,312	71,482	69,693	67,273	61,016	59,339	61,291	62,610	61,329
Mexico	59,688	52,914	54,373	58,410	67,661	70,236	71,546	53,189	66,793	72,847	82,426	86,358	90,365	91,757	87,003	93,222	97,810	101,924
United States	752,260	784,446	812,491	841,978	909,809	944,729	925,134	891,386	975,745	1,007,748	1,033,543	1,076,574	1,106,964	1,149,341	1,170,217	1,210,846	1,268,296	1,301,712
Central and South America	53,195	57,756	72,306	87,610	104,713	133,470	167,411	148,421	188,045	214,069	197,728	196,293	173,337	132,244	117,826	141,439	130,640	122,855
Argentina	3,489	4,710	6,086	7,707	9,511	12,137	15,900	15,127	17,831	19,555	19,028	18,353	12,183	10,850	11,057	12,570	11,615	10,445
Brazil	37,406	40,544	51,384	62,162	75,407	97,703	123,231	103,346	142,654	163,612	143,317	143,019	129,582	88,135	83,624	103,143	90,420	88,025
Chile	1,874	2,408	2,895	3,764	3,875	4,072	4,081	3,967	4,459	5,474	6,164	6,096	5,049	4,630	4,547	4,402	5,010	4,364
Colombia	3,226	3,204	3,931	4,507	5,088	6,344	7,055	6,802	7,992	8,460	9,187	9,189	8,791	7,590	7,297	7,390	7,756	7,241
Peru	1,400	1,474	1,584	1,812	2,058	2,522	3,121	3,193	3,589	3,973	4,657	4,872	4,730	4,278	4,339	4,551	4,695	4,445
Other Central and South America	5,801	5,415	6,426	7,658	8,774	10,691	14,022	15,986	11,521	12,995	15,375	14,764	13,002	16,761	6,963	9,383	11,144	8,335
Europe	754,601	896,723	1,023,781	1,058,247	1,143,913	1,325,372	1,421,186	1,142,668	1,242,687	1,400,885	1,311,908	1,372,896	1,421,611	1,289,669	1,317,500	1,374,737	1,476,363	1,364,890
EU	594,150	715,158	811,992	830,383	893,604	1,039,901	1,104,365	905,102	976,403	1,087,174	1,001,347	1,048,341	1,097,573	1,012,566	1,050,504	1,100,169	1,183,914	1,075,269
France	84,058	98,076	108,076	108,162	110,635	123,839	130,780	113,157	110,363	116,801	109,902	116,260	117,929	103,901	103,660	104,941	108,053	98,758
Germany	233,823	287,257	326,331	330,578	359,581	421,331	441,522	348,978	405,511	464,516	434,105	454,270	488,403	426,611	451,821	478,735	515,441	448,517
Italy	74,413	88,214	101,182	101,347	108,612	125,988	134,670	109,634	114,957	123,018	111,185	115,973	115,650	104,291	110,645	117,112	125,224	113,710
Spain	35,674	43,900	49,909	50,656	55,145	62,617	68,374	58,310	52,659	55,194	48,206	52,713	55,313	47,169	48,450	51,665	56,318	52,266
Other EU	166,183	197,710	226,494	239,640	259,631	306,127	329,020	275,022	292,913	327,645	297,949	309,126	320,278	330,595	335,929	347,715	378,878	362,017
Non-EU	160,451	181,565	211,790	227,864	250,308	285,471	316,821	237,566	266,284	313,711	310,561	324,554	324,038	277,104	266,996	274,568	292,448	289,621
United Kingdom	95,564	104,303	116,639	117,044	123,245	129,123	124,822	96,909	105,779	116,691	114,403	120,982	130,468	125,868	112,978	112,663	121,584	112,978
Russia	16,887	19,107	28,249	36,481	45,159	60,663	79,283	45,567	55,334	71,280	76,025	76,058	67,048	34,429	35,756	40,291	42,542	45,893
Switzerland	33,650	39,466	44,594	47,681	52,044	59,067	68,692	62,855	68,015	82,081	77,278	81,140	83,190	78,622	80,232	81,364	88,000	88,950
Other non-EU	14,350	18,689	22,307	26,658	29,860	36,618	44,024	32,235	37,157	43,658	42,856	46,374	43,332	38,185	38,030	40,251	40,322	41,800
Middle East	25,899	29,317	33,947	38,137	45,697	60,021	70,518	70,293	78,742	96,883	92,394	89,363	96,239	91,667	91,175	100,638	104,670	101,335
Iran	5,566	6,839	8,328	8,758	11,704	14,676	16,315	20,333	21,319	31,279	16,568	14,244	18,689	17,987	21,907	24,784	21,406	20,685
Israel	8,890	9,625	10,027	10,884	12,125	14,091	16,152	16,152	17,877	18,551	20,746	20,307	20,430	21,294	18,799	20,515	21,030	22,337
Saudi Arabia	5,447	5,948	6,885	7,904	9,180	13,379	15,560	15,731	18,948	20,804	23,343	24,874	26,802	29,101	28,957	31,787	38,110	32,024
United Arab Emirates	3,225	3,603	4,207	5,210	7,031	8,020	9,360	6,915	7,624	8,317	9,365	9,611	9,827	8,938	8,631	9,374	8,807	11,292
Other Middle East	2,771	3,302	4,500	5,381	5,657	9,855	13,131	11,163	12,973	17,932	22,371	20,328	20,492	14,347	12,881	14,177	15,317	14,996
Africa	13,492	17,316	21,019	23,459	22,746	24,912	26,350	25,294	29,128	29,523	30,662	30,225	29,954	28,402	29,108	30,591	33,761	37,739
Egypt	1,929	1,583	2,073	2,410	2,653	3,294	4,170	4,588	5,230	5,266	5,755	5,111	4,537	5,309	5,549	5,981	6,917	8,788
Nigeria	231	250	276	319	372	440	547	514	566	804	1,160	1,684	2,246	2,022	1,448	1,316	1,705	2,834
South Africa	7,343	10,808	13,510	14,678	13,067	13,525	12,949	12,210	14,222	13,856	14,480	13,398	12,885	12,055	11,857	12,127	12,766	13,082
Other Africa	3,989	4,676	5,160	6,053	6,654	7,652	8,685	7,982	9,110	9,597	9,267	10,031	10,286	9,016	10,253	11,167	12,373	13,034

Table SKTI-6

Value added of KTI manufacturing industries, by region, country, or economy: 2002–19

(Millions of current dollars)

Region, country, or economy	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Asia	854,943	973,610	1,102,593	1,185,418	1,273,002	1,445,544	1,614,967	1,581,832	1,950,353	2,208,549	2,346,199	2,386,839	2,532,557	2,581,783	2,706,127	2,978,980	3,280,359	3,293,519
China	203,326	244,588	275,052	323,745	391,773	497,876	643,951	688,103	852,641	1,033,982	1,148,147	1,283,720	1,397,329	1,460,433	1,514,143	1,702,829	1,937,445	1,981,928
India	19,769	23,472	28,886	34,487	38,898	48,746	50,596	54,385	65,498	80,343	71,012	64,854	70,716	81,048	81,256	92,316	104,875	109,996
Indonesia	13,261	16,456	17,570	17,137	18,554	23,982	30,653	29,770	36,983	43,055	44,511	49,397	48,755	49,395	51,205	54,235	51,615	53,154
Japan	447,221	496,681	547,592	553,668	535,823	553,535	587,807	526,229	629,487	645,267	661,727	541,774	528,358	510,998	565,484	568,002	576,597	582,386
Malaysia	13,310	15,136	17,762	16,499	19,085	20,397	21,347	16,456	21,704	24,513	27,327	28,132	28,909	28,071	28,584	29,099	32,169	33,587
Philippines	4,419	4,003	4,548	4,757	5,371	7,079	6,093	6,766	7,007	7,600	8,200	6,864	8,195	7,838	8,097	8,557	9,019	8,156
Singapore	15,123	15,991	21,085	22,344	26,940	29,615	25,476	25,662	34,215	38,082	38,604	37,175	39,035	38,342	39,090	45,695	63,235	57,708
South Korea	77,453	86,202	107,424	121,747	136,729	154,969	134,890	129,039	173,601	199,375	205,702	222,434	233,132	225,767	229,577	267,474	285,296	248,095
Taiwan	44,333	50,991	58,695	63,530	67,538	72,414	72,441	66,210	84,464	90,427	93,368	100,889	115,619	117,244	121,131	134,341	136,167	131,340
Thailand	11,918	14,314	16,505	18,483	21,629	25,815	29,113	25,574	29,223	28,177	28,616	29,686	30,690	31,760	33,099	34,967	38,156	38,234
Vietnam	1,287	1,473	1,831	2,294	3,021	4,038	4,990	6,408	6,975	7,711	9,375	12,007	21,105	19,566	22,565	28,060	32,249	35,594
Other Asia	3,522	4,304	5,644	6,728	7,640	7,081	7,610	7,229	8,556	10,016	9,612	9,906	10,714	11,321	11,897	13,406	13,536	13,341
Oceania	13,864	17,826	21,154	22,404	22,209	26,455	27,442	25,115	30,127	34,540	33,606	31,334	29,716	24,874	24,790	26,355	25,241	22,161
Australia	12,079	15,615	18,502	19,486	19,597	23,188	24,668	22,434	26,870	31,024	29,882	27,302	25,462	20,978	20,630	21,904	20,713	17,944
New Zealand	1,785	2,212	2,651	2,918	2,612	3,267	2,774	2,681	3,257	3,516	3,724	4,033	4,254	3,897	4,160	4,452	4,528	4,217

EU = European Union; KTI = knowledge and technology intensive; nec = not elsewhere classified.

Note(s):

Value added is the amount contributed by a country, an industry, or other entity to the value of a good or service and excludes purchases of domestic and imported materials and inputs. KTI industries include high R&D intensive and medium-high R&D intensive industries based on a classification by the Organisation for Economic Co-operation and Development. KTI manufacturing industries include chemicals and chemical products; pharmaceuticals; computer, electronic, and optical products; electrical equipment; machinery and equipment nec; motor vehicles, trailers, and semi-trailers; air and spacecraft and related machinery; railroad, military vehicles, and transport nec; and medical and dental instruments. Detail may not add to total because of rounding. The world total and regional totals do not include all countries and economies due to limitations in data availability. See [Table SKTI-4](#) for a full list of countries and economies in each region for which data are available. China includes Hong Kong. The EU total excludes the United Kingdom (UK) to reflect the new EU country composition following the UK's withdrawal on 1 February 2020. In order to maintain consistency over time, the EU aggregate excludes the UK for the entire time series.

Source(s):

U.S. Bureau of Economic Analysis, Value Added by Industry, accessed 5 October 2021; IHS Markit, special tabulations (2021) of the Comparative Industry Service.

Science and Engineering Indicators

Table SKTI-7

Value added of KTI services industries, by region, country, or economy: 2002–19

(Millions of current dollars)

Region, country, or economy	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
World	829,842	924,719	1,041,002	1,120,448	1,211,543	1,380,775	1,538,839	1,526,345	1,657,852	1,873,441	1,932,867	2,043,345	2,171,477	2,126,937	2,233,041	2,425,569	2,662,725	2,812,576
North America	315,386	329,928	360,516	383,586	411,372	435,736	483,018	496,303	543,720	602,425	630,304	674,930	718,221	773,040	829,378	890,557	987,383	1,083,512
Canada	12,652	15,365	17,640	20,043	23,539	26,912	28,421	28,031	31,824	36,319	37,547	38,945	39,285	35,441	36,365	39,966	42,969	45,369
Mexico	2,401	2,451	2,558	2,923	2,987	3,278	3,499	3,062	3,548	3,721	3,698	3,415	3,685	3,396	3,218	3,475	3,507	3,687
United States	300,333	312,111	340,318	360,619	384,845	405,546	451,098	465,210	508,349	562,385	589,059	632,570	675,251	734,204	789,795	847,116	940,907	1,034,456
Central and South America	14,593	15,010	18,661	23,793	28,292	36,188	44,116	46,371	55,292	66,394	67,793	71,099	69,933	65,201	58,668	67,299	64,777	61,447
Argentina	2,779	3,125	3,918	4,702	5,510	6,976	8,693	8,677	10,270	12,336	13,405	14,290	12,897	15,159	13,344	15,972	12,813	10,765
Brazil	4,745	5,238	7,125	9,919	12,279	16,500	19,964	21,313	26,784	32,509	29,735	30,653	30,959	23,823	23,962	26,918	25,350	25,712
Chile	750	716	924	1,131	1,374	1,613	2,070	1,951	2,460	3,154	3,410	3,596	3,296	3,213	3,539	3,959	3,770	3,538
Colombia	1,831	1,740	2,146	3,008	3,401	4,427	5,249	5,137	6,491	7,444	8,447	8,781	9,134	6,838	6,408	7,042	7,528	7,230
Peru	985	1,011	1,102	1,204	1,370	1,538	1,857	1,873	2,216	2,515	2,832	3,044	3,014	2,828	2,829	3,151	3,316	3,504
Other Central and South America	3,503	3,180	3,447	3,828	4,357	5,134	6,282	7,421	7,071	8,435	9,963	10,736	10,633	13,339	8,586	10,257	12,001	10,699
Europe	276,775	333,803	388,693	413,228	445,087	536,137	588,106	539,159	554,232	619,302	609,344	657,462	687,097	610,762	630,006	691,877	770,201	810,122
EU	200,975	242,839	279,526	293,445	315,764	376,753	423,788	398,780	396,738	442,072	424,887	465,554	487,877	435,938	461,665	511,670	573,802	598,554
France	56,765	68,060	77,334	78,885	85,214	98,207	109,234	102,942	101,686	110,425	105,390	111,919	117,220	101,062	106,103	116,185	128,694	131,487
Germany	50,445	59,479	68,118	71,575	75,540	92,306	102,228	95,967	94,175	112,193	110,286	124,405	131,242	113,688	118,334	128,058	140,520	145,206
Italy	33,066	40,211	44,437	45,911	48,350	55,535	60,984	58,795	57,301	60,468	55,354	57,863	58,832	50,733	52,970	56,813	59,600	60,483
Spain	12,044	15,305	17,452	18,704	20,230	23,522	27,018	26,388	24,424	26,578	24,778	26,380	27,129	23,372	23,948	26,441	29,490	30,112
Other EU	48,655	59,783	72,185	78,369	86,430	107,183	124,324	114,688	119,152	132,407	129,080	144,987	153,453	147,082	160,310	184,174	215,498	231,266
Non-EU	75,800	90,964	109,167	119,784	129,322	159,384	164,319	140,379	157,493	177,231	184,457	191,908	199,221	174,825	168,341	180,207	196,399	211,568
United Kingdom	53,992	65,755	78,457	84,789	88,817	109,231	102,247	83,240	89,550	95,206	95,960	93,625	106,328	102,533	98,655	103,415	117,065	127,777
Russia	5,475	6,895	8,978	10,938	14,662	18,924	25,576	21,233	28,360	37,365	41,991	48,530	44,012	27,083	24,617	29,621	30,774	32,672
Switzerland	9,860	10,677	12,121	12,506	12,802	13,627	15,646	16,600	17,904	21,126	21,037	22,089	22,988	22,531	22,380	22,807	23,687	23,961
Other non-EU	6,472	7,638	9,611	11,550	13,042	17,603	20,849	19,306	21,680	23,534	25,469	27,664	25,892	22,678	22,689	24,364	24,873	27,158
Middle East	14,232	15,254	17,264	19,469	22,931	28,955	34,469	35,863	38,515	43,278	39,436	43,741	51,229	52,837	57,084	60,975	59,426	61,478
Iran	3,307	3,968	4,789	5,719	7,272	9,984	12,043	13,127	14,744	16,288	8,870	8,292	10,659	11,239	12,226	12,941	7,989	6,264
Israel	6,167	6,101	6,404	6,985	7,648	8,779	10,606	10,994	11,294	13,253	14,709	17,488	20,779	20,783	23,412	25,845	28,445	31,082
Saudi Arabia	1,736	1,794	1,982	2,139	2,336	2,591	3,008	3,560	4,003	4,402	5,550	6,586	7,207	7,482	7,650	7,978	8,443	9,173
United Arab Emirates	2,260	2,592	3,152	3,603	4,240	5,748	6,657	5,939	6,139	6,512	7,165	7,848	8,694	9,237	9,583	10,126	10,329	10,679
Other Middle East	762	800	937	1,022	1,435	1,853	2,156	2,242	2,335	2,822	3,143	3,527	3,889	4,097	4,212	4,085	4,220	4,279
Africa	5,114	6,524	8,796	11,565	13,289	15,818	20,696	20,877	23,669	26,003	28,044	29,442	30,737	28,479	25,638	23,994	26,377	28,935
Egypt	473	382	366	510	627	753	898	1,071	1,219	3,023	4,005	3,995	4,323	4,530	4,011	2,867	3,545	4,424
Nigeria	1,221	1,387	2,690	4,630	5,683	7,140	11,701	10,823	11,952	11,401	13,177	14,842	15,735	14,370	12,017	10,321	11,177	12,691
South Africa	1,477	2,359	3,023	3,450	3,639	3,981	3,721	4,408	5,830	6,442	5,699	5,223	5,142	4,613	4,277	5,125	5,500	5,366
Other Africa	1,943	2,396	2,717	2,975	3,341	3,943	4,375	4,576	4,667	5,136	5,163	5,382	5,537	4,966	5,333	5,681	6,155	6,455

Table SKTI-7

Value added of KTI services industries, by region, country, or economy: 2002–19

(Millions of current dollars)

Region, country, or economy	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Asia	187,955	203,851	222,858	241,928	260,259	289,660	327,611	346,608	390,400	453,183	491,179	503,751	553,008	544,434	576,797	628,316	693,412	707,341
China	19,857	20,286	23,378	29,921	37,831	50,613	66,448	79,820	94,812	122,088	150,561	174,833	205,027	215,576	215,915	243,712	288,090	285,503
India	10,236	12,106	14,940	18,134	21,094	27,623	32,281	35,900	45,777	53,451	54,513	63,045	71,641	78,879	88,036	101,430	104,986	110,842
Indonesia	1,618	2,032	2,309	2,599	3,295	3,666	4,215	4,763	6,472	7,566	7,730	7,701	7,391	7,259	8,105	9,291	9,756	11,241
Japan	119,474	128,428	135,539	134,942	129,916	130,184	148,813	154,447	158,794	174,031	177,036	148,465	141,116	126,891	142,497	138,838	143,465	147,906
Malaysia	997	1,086	1,175	1,513	1,754	2,022	2,334	2,441	3,232	3,730	3,987	4,249	4,509	4,209	4,328	4,643	5,490	5,472
Philippines	1,241	1,263	1,375	1,572	1,909	2,371	2,821	2,916	3,414	3,917	4,564	4,294	4,374	4,584	5,550	5,759	6,216	6,982
Singapore	1,206	1,254	1,308	1,810	2,161	2,607	3,251	3,451	4,280	5,593	6,200	6,813	7,144	6,597	6,989	7,491	8,173	8,464
South Korea	24,816	28,046	32,284	39,650	47,842	54,308	49,681	45,529	53,933	60,707	62,670	68,587	84,084	71,574	74,743	82,987	91,541	93,077
Taiwan	4,927	5,293	5,837	6,509	7,278	8,070	8,767	8,527	9,457	10,371	10,778	11,574	12,518	12,891	13,653	15,214	16,235	16,922
Thailand	1,576	1,857	2,298	2,501	2,889	3,433	3,786	3,339	4,078	4,738	5,451	5,803	5,574	5,460	5,333	5,965	6,122	7,487
Vietnam	276	302	339	365	405	473	592	649	746	810	906	1,031	1,104	1,128	1,200	1,273	1,375	1,462
Other Asia	1,731	1,899	2,076	2,412	3,885	4,291	4,623	4,825	5,404	6,180	6,783	7,357	8,527	9,387	10,447	11,712	11,963	11,984
Oceania	15,787	20,348	24,214	26,879	30,314	38,282	40,823	41,165	52,025	62,856	66,767	62,920	61,252	52,183	55,471	62,552	61,149	59,741
Australia	14,798	19,058	22,695	25,199	28,715	36,103	38,786	39,237	49,862	60,238	64,064	60,067	58,300	49,683	52,864	59,684	58,400	56,853
New Zealand	990	1,291	1,519	1,679	1,600	2,179	2,036	1,928	2,162	2,618	2,704	2,853	2,952	2,501	2,607	2,868	2,749	2,888

EU = European Union; KTI = knowledge and technology intensive.

Note(s):

Value added is the amount contributed by a country, an industry, or other entity to the value of a good or service and excludes purchases of domestic and imported materials and inputs. KTI industries include high R&D intensive and medium-high R&D intensive industries based on a classification by the Organisation for Economic Co-operation and Development. KTI services industries include information technology and other information services, software publishing, and scientific research and development. Detail may not add to total because of rounding. The world total and regional totals do not include all countries and economies due to limitations in data availability. See [Table SKTI-4](#) for a full list of countries and economies in each region for which data are available. China includes Hong Kong. The EU total excludes the United Kingdom (UK) to reflect the new EU country composition following the UK's withdrawal on 1 February 2020. In order to maintain consistency over time, the EU aggregate excludes the UK for the entire time series.

Source(s):

U.S. Bureau of Economic Analysis, Value Added by Industry, accessed 5 October 2021; IHS Markit, special tabulations (2021) of the Comparative Industry Service.

Science and Engineering Indicators

Table SKTI-8

Value added of chemicals and chemical products industry, by region, country, or economy: 2002–19

(Millions of current dollars)

Region, country, or economy	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
World	405,241	445,478	509,771	529,708	571,994	659,869	717,963	687,255	813,509	938,688	928,274	951,414	952,772	943,524	952,857	1,006,736	1,085,992	1,052,913
North America	126,846	125,920	139,205	137,709	157,166	167,110	165,467	164,446	196,931	203,557	211,056	219,788	216,683	210,439	221,901	222,979	233,188	230,321
Canada	6,604	7,177	7,826	7,897	7,858	8,456	8,508	8,130	10,630	13,435	13,321	13,670	11,944	11,527	11,256	11,908	12,132	11,033
Mexico	9,826	8,684	10,279	10,598	13,401	13,814	15,351	12,105	14,156	14,664	16,751	17,762	14,683	13,292	12,042	10,283	10,782	10,712
United States	110,416	110,060	121,101	119,214	135,907	144,841	141,608	144,211	172,146	175,458	180,983	188,356	190,056	185,619	198,603	200,788	210,273	208,576
Central and South America	16,514	19,379	23,702	27,533	30,667	38,614	47,993	42,953	51,538	58,458	57,361	55,327	50,433	44,976	40,802	46,500	43,279	41,562
Argentina	1,705	2,431	3,106	3,847	4,552	5,505	7,378	7,528	9,247	9,708	9,682	9,088	5,871	5,427	5,918	6,841	5,661	5,441
Brazil	9,790	11,488	14,181	15,734	17,755	23,395	28,608	22,795	30,775	36,027	33,048	32,047	31,702	25,884	25,571	29,394	26,327	26,646
Chile	977	1,435	1,715	2,414	2,212	2,316	2,307	2,130	2,185	2,665	3,010	2,627	2,153	1,930	1,757	1,576	1,734	1,472
Colombia	1,552	1,650	1,916	2,174	2,346	2,732	3,265	3,420	3,809	3,840	4,280	4,317	4,133	3,634	3,559	3,685	3,840	3,485
Peru	534	566	650	754	829	996	1,213	1,210	1,381	1,501	1,717	1,824	1,760	1,609	1,607	1,611	1,661	1,696
Other Central and South America	1,955	1,809	2,133	2,610	2,974	3,670	5,222	5,869	4,141	4,718	5,624	5,424	4,814	6,491	2,389	3,393	4,057	2,822
Europe	111,313	129,785	146,546	153,007	160,423	183,213	201,694	163,170	175,320	201,061	184,094	190,416	192,564	184,586	180,542	189,564	199,287	178,417
EU	88,006	102,175	116,428	119,288	123,391	143,759	151,895	130,727	139,272	154,962	141,652	146,129	147,245	146,974	147,577	155,120	162,488	143,042
France	12,071	14,369	16,189	17,077	17,185	20,043	22,206	20,489	19,231	21,970	20,561	23,489	24,150	21,732	20,962	22,521	22,748	20,046
Germany	33,644	38,923	43,474	43,546	44,210	51,349	55,032	47,314	53,121	56,488	51,141	53,014	55,584	50,551	52,828	56,173	58,734	50,973
Italy	9,267	10,407	11,761	11,739	12,006	13,766	13,629	11,732	12,965	13,412	12,281	13,009	10,214	12,085	13,296	13,701	14,549	12,950
Spain	6,879	8,144	9,425	9,764	10,245	11,386	12,513	10,735	11,205	12,278	10,129	9,843	10,228	8,940	9,648	10,398	11,076	9,917
Other EU	26,146	30,332	35,579	37,162	39,746	47,215	48,517	40,457	42,750	50,815	47,540	46,775	47,069	53,666	50,844	52,326	55,381	49,155
Non-EU	23,307	27,610	30,118	33,720	37,032	39,454	49,799	32,443	36,048	46,099	42,442	44,287	45,319	37,611	32,965	34,444	36,799	35,375
United Kingdom	14,539	16,494	15,797	17,047	17,713	16,476	14,427	12,380	12,003	14,915	14,075	16,615	18,517	18,673	15,400	15,711	17,298	15,754
Russia	2,955	4,081	6,360	9,056	10,426	12,751	23,052	10,677	13,115	18,964	17,814	15,312	14,487	6,974	5,793	6,691	7,111	7,662
Switzerland	2,344	2,626	2,855	3,037	3,344	3,769	4,178	4,197	4,526	4,650	3,537	3,850	4,063	4,378	4,713	4,370	5,166	4,973
Other non-EU	3,468	4,409	5,106	4,579	5,549	6,459	8,141	5,188	6,405	7,569	7,017	8,510	8,252	7,586	7,058	7,672	7,225	6,985
Middle East	11,424	12,489	15,826	17,972	22,333	33,131	40,160	38,511	44,116	55,756	55,427	53,078	56,964	53,523	51,222	55,838	61,135	56,638
Iran	2,618	2,498	3,556	3,377	5,026	7,543	8,222	9,982	10,604	15,564	8,246	7,087	9,301	8,951	9,881	11,180	9,593	9,393
Israel	1,032	1,179	1,426	1,718	2,089	2,433	3,584	3,410	3,626	4,103	4,342	4,160	3,631	5,014	3,529	3,884	3,926	3,811
Saudi Arabia	3,969	4,332	5,014	5,760	6,692	10,441	12,074	12,445	14,994	16,542	18,520	19,415	20,976	23,159	23,541	25,386	31,011	25,671
United Arab Emirates	2,220	2,480	2,895	3,586	4,839	5,520	6,439	4,755	5,244	5,498	6,221	6,119	6,644	5,688	5,230	5,849	6,098	7,818
Other Middle East	1,586	2,002	2,935	3,530	3,686	7,194	9,840	7,918	9,648	14,049	18,098	16,296	16,412	10,710	9,041	9,540	10,507	9,944
Africa	4,917	6,448	7,844	8,710	6,815	7,831	9,044	8,818	10,191	10,251	11,075	10,760	10,742	9,885	10,383	10,509	11,893	13,189
Egypt	866	710	930	1,081	1,190	1,478	1,870	2,058	2,463	2,658	2,943	2,263	1,805	1,767	2,258	2,018	2,453	2,847
Nigeria	60	64	72	84	98	116	141	129	145	233	387	606	853	853	670	629	789	1,292
South Africa	2,774	4,263	5,276	5,669	3,564	3,606	3,862	3,816	4,203	3,870	4,229	4,012	3,947	3,434	2,965	3,113	3,318	3,445
Other Africa	1,217	1,410	1,565	1,875	1,963	2,631	3,170	2,815	3,380	3,491	3,517	3,880	4,137	3,831	4,491	4,749	5,334	5,605

Table SKTI-8

Value added of chemicals and chemical products industry, by region, country, or economy: 2002–19

(Millions of current dollars)

Region, country, or economy	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Asia	132,031	148,563	173,140	181,215	191,153	225,299	248,464	264,193	329,339	403,050	403,099	415,567	418,983	434,849	443,292	476,408	532,450	528,659
China	36,714	43,679	56,156	62,765	74,288	100,067	120,194	127,064	163,643	214,757	221,443	242,156	250,309	256,040	246,983	273,074	325,928	326,874
India	5,271	6,011	7,072	8,074	8,931	11,716	12,827	13,305	15,775	21,689	16,721	15,908	15,614	21,114	20,259	22,730	25,538	29,263
Indonesia	1,730	2,453	1,819	2,646	4,348	6,000	7,728	7,355	8,976	12,350	13,473	17,468	17,783	16,159	16,465	17,930	16,120	17,636
Japan	62,074	67,330	70,768	67,471	62,539	62,250	67,269	74,750	85,703	89,862	89,763	74,365	68,057	70,366	82,954	80,251	78,682	76,153
Malaysia	2,101	2,656	3,586	3,749	4,975	4,655	5,283	4,407	5,847	6,194	6,542	6,202	5,862	6,143	6,154	6,164	7,343	7,404
Philippines	619	605	660	614	706	702	684	746	671	1,010	1,120	785	720	708	885	914	946	904
Singapore	1,646	1,893	2,748	2,576	2,476	3,377	1,502	2,409	3,470	3,985	2,640	4,156	4,436	5,814	8,969	8,828	9,358	9,380
South Korea	12,686	13,852	17,076	18,878	19,811	22,508	20,652	19,119	24,879	32,449	32,232	33,706	34,393	33,674	34,189	35,966	36,767	30,636
Taiwan	6,564	6,880	9,302	9,816	7,242	8,564	5,894	7,884	12,346	11,567	9,467	10,454	10,790	13,105	14,379	17,442	17,971	16,170
Thailand	899	1,062	1,124	1,210	1,343	1,600	1,990	2,119	2,842	3,479	3,913	4,294	4,674	5,050	5,391	5,954	6,473	6,889
Vietnam	320	353	432	542	699	826	1,157	1,891	1,534	1,466	1,673	1,821	1,922	2,210	2,347	2,478	2,853	3,089
Other Asia	1,405	1,790	2,398	2,873	3,794	3,034	3,285	3,142	3,652	4,243	4,111	4,252	4,422	4,465	4,317	4,677	4,473	4,261
Oceania	2,196	2,893	3,508	3,562	3,437	4,671	5,140	5,164	6,074	6,552	6,163	6,478	6,402	5,266	4,716	4,937	4,760	4,128
Australia	1,716	2,414	2,929	2,945	2,887	4,074	4,716	4,632	5,503	5,970	5,470	5,590	5,639	4,555	3,924	4,110	3,980	3,385
New Zealand	479	479	579	617	550	597	425	532	571	582	693	887	763	711	792	828	779	743

EU = European Union.

Note(s):

Value added is the amount contributed by a country, an industry, or other entity to the value of a good or service and excludes purchases of domestic and imported materials and inputs. Detail may not add to total because of rounding. The world total and regional totals do not include all countries and economies due to limitations in data availability. See [Table SKTI-4](#) for a full list of countries and economies in each region for which data are available. China includes Hong Kong. The EU total excludes the United Kingdom (UK) to reflect the new EU country composition following the UK's withdrawal on 1 February 2020. In order to maintain consistency over time, the EU aggregate excludes the UK for the entire time series.

Source(s):

U.S. Bureau of Economic Analysis, Value Added by Industry, accessed 5 October 2021; IHS Markit, special tabulations (2021) of the Comparative Industry Service.

Science and Engineering Indicators

Table SKTI-9

Value added of pharmaceuticals industry, by region, country, or economy: 2002–19

(Millions of current dollars)

Region, country, or economy	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
World	256,875	285,989	308,882	323,212	355,289	389,752	415,141	435,708	439,928	471,393	465,123	482,080	502,961	530,653	568,998	593,700	642,580	657,966
North America	103,871	107,628	112,684	111,221	126,929	131,817	132,616	151,480	139,434	138,362	132,841	141,236	148,706	155,782	166,431	170,148	173,333	190,466
Canada	2,941	3,589	3,523	3,734	4,996	4,450	4,176	4,116	4,540	4,283	4,693	3,800	4,465	3,994	4,109	4,077	4,067	4,302
Mexico	3,497	3,467	3,475	3,730	4,076	4,281	4,390	3,613	3,744	3,577	4,158	4,321	4,278	4,152	3,876	3,935	3,779	3,781
United States	97,432	100,571	105,686	103,758	117,857	123,086	124,050	143,751	131,150	130,502	123,990	133,114	139,962	147,636	158,446	162,136	165,487	182,383
Central and South America	4,553	4,828	5,779	7,694	9,467	11,482	13,036	12,672	14,894	16,138	15,531	15,061	14,620	11,991	11,863	14,420	13,493	12,724
Argentina	188	264	329	417	506	623	830	893	1,078	1,196	1,253	1,251	1,047	1,059	1,127	1,232	1,254	1,296
Brazil	3,000	3,282	3,870	5,523	6,930	8,486	9,148	8,657	10,513	11,268	10,131	9,724	9,804	7,257	7,529	9,716	8,498	7,895
Chile	181	203	259	301	396	439	521	498	633	760	787	726	718	634	638	686	709	723
Colombia	549	511	702	719	806	961	1,183	1,149	1,369	1,489	1,659	1,680	1,599	1,406	1,365	1,450	1,538	1,471
Peru	225	189	177	210	245	297	383	401	422	446	482	434	389	283	292	286	292	277
Other Central and South America	409	379	442	524	583	677	971	1,074	880	979	1,219	1,247	1,062	1,352	911	1,050	1,202	1,063
Europe	95,799	113,846	125,475	133,499	142,372	160,137	174,131	167,671	166,818	175,907	165,317	171,553	175,577	185,095	197,510	194,683	215,599	211,355
EU	69,579	83,321	89,451	95,040	98,518	111,819	120,870	119,609	116,699	122,827	114,659	119,819	122,860	134,444	142,598	137,994	154,277	147,950
France	10,813	13,786	14,639	15,342	17,112	17,995	18,137	16,587	15,595	16,656	15,139	15,937	15,281	13,766	13,841	14,192	14,598	14,363
Germany	12,504	16,793	19,629	22,044	23,545	26,982	31,294	28,523	27,198	29,602	28,403	29,553	31,318	25,351	28,475	25,004	30,865	24,796
Italy	7,867	9,560	10,225	9,718	9,738	10,725	12,066	11,164	11,042	11,909	10,909	11,480	10,861	9,858	10,272	10,376	11,045	10,333
Spain	3,935	5,043	5,987	6,556	7,296	8,671	10,092	9,127	7,089	6,819	6,599	8,057	9,104	7,578	7,772	7,747	7,897	7,755
Other EU	34,461	38,139	38,972	41,381	40,827	47,446	49,280	54,208	55,774	57,841	53,609	54,793	56,296	77,891	82,238	80,675	89,871	90,704
Non-EU	26,220	30,525	36,024	38,459	43,854	48,318	53,261	48,062	50,119	53,080	50,658	51,734	52,717	50,651	54,912	56,689	61,323	63,405
United Kingdom	15,010	16,303	18,974	19,676	22,967	23,921	25,465	21,853	21,612	22,054	19,797	18,608	19,437	18,109	18,039	17,561	19,022	19,137
Russia	839	972	1,223	1,485	1,810	2,343	2,695	2,124	2,434	2,601	3,185	3,687	3,307	1,416	2,006	1,728	1,639	1,742
Switzerland	9,596	11,958	14,254	15,253	16,806	19,098	21,771	21,311	22,730	25,453	24,679	26,371	26,949	28,243	31,661	34,058	37,137	38,633
Other non-EU	776	1,292	1,573	2,045	2,272	2,956	3,331	2,774	3,343	2,972	2,997	3,069	3,024	2,882	3,206	3,341	3,524	3,893
Middle East	2,476	2,871	3,270	3,656	4,173	4,777	5,089	5,163	6,415	7,261	6,418	6,161	6,225	7,297	6,280	6,625	5,839	5,713
Iran	354	522	556	608	745	947	1,234	1,606	1,810	2,657	1,408	1,210	1,588	1,528	1,746	1,974	1,688	1,597
Israel	1,642	1,816	2,103	2,326	2,552	2,733	2,632	2,475	3,456	3,333	3,528	3,380	2,950	4,073	2,867	2,789	2,331	2,139
Saudi Arabia	52	57	66	76	88	137	159	163	196	209	250	272	289	310	308	374	418	385
United Arab Emirates	134	149	174	216	291	332	388	286	316	373	423	459	419	459	525	506	398	449
Other Middle East	294	326	371	431	496	628	676	632	636	689	810	841	979	928	834	982	1,003	1,144
Africa	787	867	1,094	1,228	1,303	1,505	1,719	1,813	2,158	2,114	2,184	2,298	2,213	2,346	2,477	2,640	2,929	3,592
Egypt	356	292	382	444	489	607	769	846	1,012	921	922	983	856	987	993	1,160	1,384	1,942
Nigeria	10	10	11	13	16	18	22	20	23	37	61	96	135	135	112	108	128	213
South Africa	236	342	465	509	533	581	596	635	775	778	826	831	817	856	961	948	955	941
Other Africa	185	223	235	262	266	298	331	312	347	378	374	388	406	368	411	423	462	496

Table SKTI-9

Value added of pharmaceuticals industry, by region, country, or economy: 2002–19

(Millions of current dollars)

Region, country, or economy	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Asia	47,757	53,871	58,226	63,555	68,490	77,420	86,109	94,418	106,954	127,769	139,055	142,036	152,247	165,341	181,747	202,049	228,223	231,394
China	14,497	16,186	16,141	19,658	22,349	28,052	37,488	41,334	47,335	58,692	73,290	84,314	95,166	106,325	116,085	133,259	153,450	158,924
India	3,039	3,438	4,306	5,075	5,614	7,365	8,063	7,915	9,534	13,722	11,486	12,344	13,292	14,276	14,517	19,495	21,806	23,995
Indonesia	1,840	2,137	1,682	2,008	2,026	2,796	3,603	3,427	4,184	3,533	1,468	1,141	1,300	1,091	1,260	1,418	1,415	1,588
Japan	21,473	24,174	25,367	25,351	23,636	22,512	23,366	27,720	31,431	33,576	32,475	27,061	24,127	24,919	29,719	27,432	26,896	27,004
Malaysia	87	99	108	142	180	178	223	212	275	299	323	376	429	374	359	344	380	410
Philippines	151	185	210	236	331	285	236	386	471	430	392	706	556	338	442	546	414	408
Singapore	2,719	3,274	5,228	4,777	7,462	8,506	5,714	6,237	6,205	9,298	11,391	7,218	7,503	7,577	8,000	6,838	9,689	4,534
South Korea	2,647	2,839	3,331	4,206	4,690	5,201	4,611	4,258	4,127	4,666	4,470	4,794	5,440	5,923	6,374	7,177	7,820	7,390
Taiwan	556	649	688	770	875	951	953	1,026	1,177	1,278	1,331	1,381	1,325	1,336	1,447	1,439	1,463	1,662
Thailand	91	109	123	138	170	202	226	260	340	366	436	501	565	629	688	795	983	1,074
Vietnam	208	201	269	273	290	375	480	526	621	430	500	598	735	676	731	709	913	962
Other Asia	449	579	773	922	869	997	1,146	1,118	1,255	1,480	1,493	1,604	1,809	1,879	2,127	2,599	2,994	3,443
Oceania	1,632	2,080	2,353	2,358	2,555	2,613	2,442	2,491	3,254	3,842	3,777	3,736	3,373	2,800	2,692	3,135	3,165	2,723
Australia	1,557	2,010	2,277	2,266	2,477	2,495	2,379	2,404	3,122	3,709	3,584	3,522	3,156	2,594	2,467	2,915	2,953	2,525
New Zealand	75	71	76	92	77	118	63	87	133	134	194	214	217	206	225	220	212	198

EU = European Union.

Note(s):

Value added is the amount contributed by a country, an industry, or other entity to the value of a good or service and excludes purchases of domestic and imported materials and inputs. Detail may not add to total because of rounding. The world total and regional totals do not include all countries and economies due to limitations in data availability. See [Table SKTI-4](#) for a full list of countries and economies in each region for which data are available. China includes Hong Kong. The EU total excludes the United Kingdom (UK) to reflect the new EU country composition following the UK's withdrawal on 1 February 2020. In order to maintain consistency over time, the EU aggregate excludes the UK for the entire time series.

Source(s):

U.S. Bureau of Economic Analysis, Value Added by Industry, accessed 5 October 2021; IHS Markit, special tabulations (2021) of the Comparative Industry Service.

Science and Engineering Indicators

Table SKTI-10

Value added of computer, electronic, and optical products industry, by region, country, or economy: 2002–19

(Millions of current dollars)

Region, country, or economy	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
World	542,766	620,698	694,914	726,171	781,020	844,390	870,614	787,935	909,898	967,122	973,445	1,007,788	1,066,306	1,057,710	1,074,808	1,175,421	1,283,449	1,255,021
North America	197,674	216,226	223,055	234,423	249,092	254,226	256,648	243,111	262,113	260,000	263,797	266,499	275,741	292,357	291,607	304,636	329,873	333,865
Canada	4,003	4,968	5,778	6,506	6,872	7,317	7,086	6,716	7,725	7,691	6,728	5,895	5,646	4,925	4,709	5,036	4,649	4,371
Mexico	19,528	16,524	14,500	15,389	16,653	16,792	15,437	10,882	12,298	12,519	13,680	13,823	16,690	17,968	16,743	17,650	18,225	19,369
United States	174,143	194,735	202,777	212,528	225,567	230,117	234,126	225,514	242,090	239,790	243,389	246,781	253,405	269,464	270,155	281,950	306,999	310,124
Central and South America	5,242	4,335	6,035	6,996	8,929	9,944	12,339	9,815	12,998	14,249	13,914	14,558	13,077	9,444	8,675	11,057	9,462	8,556
Argentina	100	158	239	314	364	449	535	491	646	710	685	651	529	490	504	597	505	450
Brazil	4,516	3,565	5,091	5,912	7,717	8,422	10,542	7,876	11,080	12,251	11,536	12,205	10,970	7,026	6,976	9,165	7,549	6,950
Chile	26	27	29	28	27	29	25	28	35	43	51	58	99	340	305	277	311	219
Colombia	103	99	128	114	124	159	132	151	168	190	195	326	281	263	153	178	180	170
Peru	20	12	14	15	28	36	49	38	45	43	64	71	67	57	52	52	53	52
Other Central and South America	478	472	533	613	669	848	1,056	1,231	1,025	1,012	1,384	1,247	1,131	1,268	685	788	863	715
Europe	108,492	127,570	151,633	155,402	164,372	188,490	193,642	153,165	162,708	180,726	166,206	173,880	178,513	153,629	153,140	156,544	166,613	151,855
EU	80,619	97,179	114,370	116,667	123,289	141,472	140,252	109,912	115,144	123,273	108,978	115,134	118,558	104,869	107,578	110,839	115,609	101,320
France	14,778	16,273	17,880	16,540	16,566	18,050	18,001	15,026	15,177	15,378	14,122	14,731	14,757	12,751	13,086	13,743	14,801	13,455
Germany	25,086	31,570	37,819	37,842	39,725	49,903	47,858	34,954	39,688	44,894	40,585	43,025	45,208	42,374	44,539	45,695	45,800	39,349
Italy	7,349	8,578	9,894	10,122	10,445	11,822	12,025	10,223	10,720	11,870	10,728	10,552	10,625	9,224	8,926	9,361	9,894	8,592
Spain	2,385	2,730	2,762	2,892	2,934	3,587	3,959	3,342	2,820	2,891	2,512	2,463	2,160	1,731	1,737	1,845	2,102	1,887
Other EU	31,021	38,028	46,014	49,271	53,618	58,110	58,410	46,366	46,739	48,240	41,032	44,363	45,808	38,789	39,291	40,195	43,012	38,037
Non-EU	27,872	30,391	37,263	38,735	41,082	47,018	53,390	43,253	47,564	57,453	57,228	58,746	59,954	48,760	45,562	45,704	51,004	50,535
United Kingdom	14,360	13,746	17,754	16,607	16,937	18,148	19,255	16,589	17,593	18,802	17,854	17,979	18,884	18,317	16,914	16,620	19,447	17,968
Russia	1,944	2,607	3,876	4,713	5,648	7,671	9,196	5,845	7,358	9,170	9,852	10,467	9,776	4,338	4,147	4,706	4,845	5,204
Switzerland	9,508	11,196	12,611	14,051	15,452	17,601	21,216	18,239	19,726	26,273	26,074	26,844	27,846	23,365	21,708	21,165	23,324	23,712
Other non-EU	2,061	2,842	3,022	3,364	3,045	3,598	3,724	2,579	2,886	3,208	3,449	3,456	3,449	2,739	2,793	3,213	3,387	3,651
Middle East	4,795	5,066	5,242	5,458	5,900	6,970	7,363	8,181	8,524	9,045	10,704	10,092	10,847	9,570	9,679	10,793	11,569	13,014
Iran	293	331	471	410	401	467	486	861	790	1,159	614	528	693	667	783	884	760	725
Israel	4,338	4,549	4,547	4,787	5,238	6,176	6,492	6,966	7,318	7,408	9,565	9,042	9,634	8,495	8,418	9,369	10,264	11,757
Saudi Arabia	20	22	26	30	34	36	41	40	48	56	69	86	95	91	85	107	115	101
United Arab Emirates	23	26	30	37	50	57	67	49	54	63	69	64	59	62	68	74	64	67
Other Middle East	120	138	168	194	177	233	278	265	314	359	387	371	367	255	324	360	367	364
Africa	829	1,083	1,318	1,504	1,493	1,482	1,408	1,470	1,629	1,577	1,954	1,606	1,586	1,394	1,493	1,628	1,687	1,745
Egypt	48	39	51	60	66	82	103	114	136	72	470	113	51	147	190	283	347	385
Nigeria	2	2	2	3	3	4	4	4	5	8	8	9	10	8	6	5	7	12
South Africa	379	557	687	690	626	641	582	583	624	638	676	639	657	585	636	607	545	513
Other Africa	401	485	577	751	798	756	719	769	864	859	799	845	868	653	661	733	788	835

Table SKTI-10

Value added of computer, electronic, and optical products industry, by region, country, or economy: 2002–19

(Millions of current dollars)

Region, country, or economy	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Asia	223,876	263,909	304,933	319,315	347,923	379,462	394,940	368,883	457,960	496,598	511,758	536,330	582,298	586,512	605,738	686,309	759,766	742,192
China	48,916	62,372	72,135	83,249	99,773	111,481	132,967	130,115	157,898	186,633	210,581	237,686	262,882	279,664	286,243	319,641	364,788	373,195
India	2,480	2,882	2,985	3,653	4,051	4,743	4,257	4,390	4,838	4,326	3,955	4,200	3,869	4,481	4,791	5,500	6,523	6,490
Indonesia	1,047	1,317	1,310	1,135	1,746	2,665	3,035	2,894	2,725	2,828	3,034	3,865	3,280	4,680	4,812	4,743	3,733	3,407
Japan	95,171	110,672	122,184	116,685	113,142	117,878	119,312	103,820	124,797	120,759	103,279	84,199	81,303	75,974	80,840	78,501	77,647	76,800
Malaysia	7,571	8,822	10,074	9,217	9,833	11,284	10,777	7,587	10,118	11,800	13,482	14,178	14,874	13,390	13,784	14,177	15,196	15,641
Philippines	2,423	1,955	2,300	2,466	2,912	4,329	2,942	3,381	3,089	3,614	4,209	2,502	2,524	2,397	3,273	3,407	3,690	3,145
Singapore	7,401	7,339	9,182	10,704	12,016	11,725	11,508	10,398	16,508	15,304	15,132	15,499	15,787	15,434	12,921	19,999	31,646	31,800
South Korea	28,708	31,924	42,978	46,828	52,442	59,518	50,943	53,639	72,951	81,802	83,463	91,433	95,365	90,060	93,925	121,739	134,814	111,575
Taiwan	25,716	31,387	36,140	39,245	45,738	48,277	51,004	44,618	54,795	59,504	63,109	69,327	81,882	81,002	83,282	91,902	91,969	88,970
Thailand	3,879	4,582	4,851	5,222	5,600	6,737	7,232	7,017	8,821	7,864	8,101	8,221	8,339	8,453	8,512	8,611	9,078	8,500
Vietnam	212	240	266	306	376	505	607	678	1,029	1,723	2,982	4,772	11,695	10,433	12,677	17,435	20,088	22,153
Other Asia	352	417	528	605	292	320	356	345	391	441	431	448	498	543	678	654	594	516
Oceania	1,859	2,508	2,698	3,073	3,310	3,815	4,273	3,311	3,966	4,927	5,112	4,824	4,245	4,804	4,476	4,455	4,479	3,794
Australia	1,693	2,265	2,399	2,733	2,863	3,260	3,739	2,801	3,362	4,297	4,508	4,260	3,548	4,148	3,778	3,922	3,865	3,250
New Zealand	166	243	299	340	447	555	534	510	604	630	604	564	697	656	698	533	614	544

EU = European Union.

Note(s):

Value added is the amount contributed by a country, an industry, or other entity to the value of a good or service and excludes purchases of domestic and imported materials and inputs. Detail may not add to total because of rounding. The world total and regional totals do not include all countries and economies due to limitations in data availability. See [Table SKTI-4](#) for a full list of countries and economies in each region for which data are available. China includes Hong Kong. The EU total excludes the United Kingdom (UK) to reflect the new EU country composition following the UK's withdrawal on 1 February 2020. In order to maintain consistency over time, the EU aggregate excludes the UK for the entire time series.

Source(s):

U.S. Bureau of Economic Analysis, Value Added by Industry, accessed 5 October 2021; IHS Markit, special tabulations (2021) of the Comparative Industry Service.

Science and Engineering Indicators

Table SKTI-11

Value added of electrical equipment industry, by region, country, or economy: 2002–19

(Millions of current dollars)

Region, country, or economy	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
World	240,881	268,859	295,987	315,110	353,353	396,757	453,401	418,029	471,827	516,978	529,013	550,818	567,947	554,425	566,412	613,035	658,098	666,249
North America	50,541	51,791	49,232	51,193	60,404	60,001	65,501	58,903	59,945	58,040	62,341	67,896	63,963	73,208	67,629	70,391	74,996	74,959
Canada	2,445	2,302	2,746	3,059	3,145	3,478	3,540	3,232	3,513	4,061	3,997	3,789	3,007	2,893	3,002	3,129	3,032	2,795
Mexico	4,406	3,944	4,423	4,922	5,834	6,227	6,448	5,030	5,655	5,670	6,192	6,003	6,526	6,642	6,165	6,489	6,903	7,160
United States	43,690	45,545	42,063	43,212	51,425	50,296	55,513	50,640	50,777	48,309	52,152	58,104	54,430	63,672	58,462	60,773	65,061	65,004
Central and South America	4,285	4,318	5,071	7,116	8,411	10,952	13,579	12,804	16,443	18,342	17,625	18,287	16,515	12,477	10,656	12,442	11,558	10,943
Argentina	188	228	309	371	438	586	750	637	809	964	915	909	732	696	675	760	744	690
Brazil	3,023	3,118	3,528	5,193	6,123	8,137	10,294	9,695	12,905	14,232	13,166	13,740	12,446	8,561	7,331	8,920	7,743	7,599
Chile	206	193	223	264	332	351	308	341	420	526	613	702	609	328	377	342	364	248
Colombia	212	181	259	349	432	596	690	594	749	815	795	830	761	660	621	594	610	586
Peru	90	75	100	112	141	189	251	194	229	194	236	313	315	336	393	342	426	354
Other Central and South America	567	523	652	827	945	1,093	1,287	1,343	1,331	1,612	1,900	1,793	1,652	1,898	1,259	1,484	1,671	1,466
Europe	81,655	95,210	110,032	111,186	123,723	142,201	158,856	127,492	135,180	147,921	137,644	140,893	142,444	120,682	123,513	129,115	134,725	119,657
EU	65,198	78,088	90,212	89,444	98,809	112,290	126,279	104,944	110,416	119,675	109,706	112,699	115,278	98,136	100,950	106,349	112,416	97,079
France	7,641	8,589	9,863	9,275	9,019	10,635	11,282	9,938	9,372	9,664	9,109	9,396	9,181	7,533	7,600	7,507	7,798	6,668
Germany	29,792	35,556	41,595	40,314	45,485	48,176	53,982	46,511	51,679	57,312	52,290	54,474	57,259	45,899	47,618	50,541	52,206	42,432
Italy	9,115	11,086	12,952	13,291	14,139	16,193	17,293	14,176	14,764	15,672	14,107	14,409	13,573	11,960	12,316	12,689	13,527	11,800
Spain	4,078	5,113	5,867	5,660	6,885	7,699	8,632	6,879	6,329	5,603	4,804	4,874	4,977	4,461	4,646	4,945	5,542	4,729
Other EU	14,572	17,744	19,935	20,904	23,280	29,588	35,090	27,440	28,272	31,424	29,397	29,545	30,288	28,284	28,771	30,666	33,343	31,450
Non-EU	16,457	17,122	19,819	21,742	24,915	29,912	32,577	22,548	24,764	28,246	27,938	28,195	27,166	22,546	22,562	22,765	22,309	22,578
United Kingdom	7,793	8,368	8,981	8,447	8,539	9,388	8,747	6,823	7,200	6,877	7,299	6,839	7,885	6,903	6,342	6,084	5,838	5,552
Russia	3,470	2,765	4,091	5,283	7,384	9,557	10,751	4,780	6,349	7,851	8,089	7,255	6,426	4,163	4,561	5,199	5,442	5,894
Switzerland	3,171	3,536	3,914	4,103	4,317	5,126	6,237	5,708	5,583	6,804	6,152	6,426	6,019	5,534	5,530	5,127	4,898	4,864
Other non-EU	2,022	2,453	2,834	3,909	4,675	5,840	6,842	5,236	5,631	6,713	6,397	7,675	6,836	5,946	6,129	6,355	6,132	6,268
Middle East	2,100	2,397	2,621	3,078	3,645	4,321	5,082	5,122	5,507	6,820	6,091	6,440	6,683	6,649	6,641	7,576	7,642	7,588
Iran	473	533	618	750	842	1,013	1,052	1,609	1,524	2,236	1,185	1,018	1,336	1,286	1,647	1,869	1,618	1,560
Israel	330	431	328	334	389	479	557	506	568	584	523	555	558	486	487	500	441	443
Saudi Arabia	792	865	1,001	1,150	1,336	1,488	1,863	1,692	2,041	2,171	2,423	2,727	2,882	3,033	2,761	3,329	3,688	3,272
United Arab Emirates	327	365	426	528	712	812	947	700	772	921	1,023	1,209	962	918	862	965	976	1,342
Other Middle East	178	203	248	317	366	529	662	616	603	908	938	931	944	925	885	913	919	971
Africa	1,634	1,900	2,281	2,599	2,895	3,228	3,452	3,420	3,717	3,596	3,760	3,818	3,564	3,353	3,272	3,660	3,891	4,053
Egypt	401	329	431	501	551	685	866	953	891	661	808	977	806	883	809	1,031	1,102	1,091
Nigeria	1	1	1	1	2	2	2	2	2	4	4	5	5	4	3	3	4	7
South Africa	530	754	942	1,056	1,216	1,241	1,166	1,206	1,409	1,392	1,490	1,373	1,305	1,254	1,168	1,197	1,259	1,325
Other Africa	702	816	907	1,040	1,126	1,300	1,416	1,259	1,415	1,538	1,459	1,463	1,448	1,211	1,291	1,428	1,526	1,630

Table SKTI-11

Value added of electrical equipment industry, by region, country, or economy: 2002–19

(Millions of current dollars)

Region, country, or economy	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Asia	99,253	111,308	124,540	137,564	151,971	173,671	204,020	207,952	248,333	279,168	298,484	310,762	332,475	336,119	352,756	387,445	422,932	446,996
China	27,719	32,094	36,381	46,107	57,244	74,419	102,628	113,041	133,301	157,116	174,714	196,140	214,155	225,875	236,717	266,149	297,886	318,792
India	2,456	2,728	3,292	4,949	5,501	6,300	5,970	6,491	8,104	8,260	7,553	6,855	6,621	7,604	7,720	6,967	7,458	7,941
Indonesia	970	980	1,475	1,835	2,484	2,323	2,688	2,703	3,137	4,251	5,232	7,235	5,974	5,188	5,083	5,272	5,213	5,810
Japan	54,815	60,993	66,099	66,371	65,007	66,761	69,615	63,394	73,955	77,529	77,461	64,208	67,124	60,001	66,220	69,155	69,490	71,213
Malaysia	853	914	1,159	915	1,119	1,258	1,384	1,029	1,196	1,378	1,561	1,619	1,677	2,120	2,115	2,111	2,253	2,411
Philippines	466	424	478	542	526	582	632	691	778	649	524	578	602	650	716	752	856	747
Singapore	316	333	351	358	429	467	522	450	464	487	605	661	637	592	619	643	760	753
South Korea	7,578	8,566	10,608	11,538	13,505	14,633	13,773	13,574	18,612	20,279	21,087	23,454	24,966	23,447	22,640	24,503	26,627	26,509
Taiwan	2,550	2,631	2,724	2,895	3,343	3,673	3,450	3,071	4,174	4,275	4,776	4,852	5,008	4,973	5,128	5,241	5,384	5,326
Thailand	953	1,033	1,270	1,234	1,573	1,878	1,813	1,947	2,675	2,911	2,909	2,864	2,818	2,772	2,708	2,981	3,032	2,977
Vietnam	175	201	255	360	522	683	792	866	1,096	1,054	1,149	1,338	1,857	1,743	1,830	2,236	2,555	3,002
Other Asia	403	410	446	461	716	694	754	697	839	979	913	959	1,035	1,157	1,259	1,435	1,420	1,513
Oceania	1,412	1,937	2,209	2,375	2,304	2,383	2,912	2,336	2,702	3,091	3,067	2,722	2,303	1,937	1,944	2,407	2,354	2,054
Australia	1,176	1,586	1,784	1,889	1,962	2,113	2,747	2,160	2,464	2,853	2,714	2,403	1,907	1,582	1,584	1,738	1,728	1,473
New Zealand	236	351	425	487	342	270	165	176	238	238	353	319	397	355	360	669	627	581

EU = European Union.

Note(s):

Value added is the amount contributed by a country, an industry, or other entity to the value of a good or service and excludes purchases of domestic and imported materials and inputs. Detail may not add to total because of rounding. The world total and regional totals do not include all countries and economies due to limitations in data availability. See [Table SKTI-4](#) for a full list of countries and economies in each region for which data are available. China includes Hong Kong. The EU total excludes the United Kingdom (UK) to reflect the new EU country composition following the UK's withdrawal on 1 February 2020. In order to maintain consistency over time, the EU aggregate excludes the UK for the entire time series.

Source(s):

U.S. Bureau of Economic Analysis, Value Added by Industry, accessed 5 October 2021; IHS Markit, special tabulations (2021) of the Comparative Industry Service.

Science and Engineering Indicators

Table SKTI-12

Value added of machinery and equipment industry, by region, country, or economy: 2002–19

(Millions of current dollars)

Region, country, or economy	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
World	438,483	493,868	566,517	611,993	669,699	773,527	874,436	732,876	850,751	1,000,589	1,019,595	1,026,886	1,051,297	978,246	986,386	1,071,354	1,168,837	1,163,389
North America	111,254	110,503	119,371	131,100	140,542	149,476	152,155	133,904	146,142	167,833	176,463	181,437	183,533	172,472	162,513	174,504	183,806	189,701
Canada	7,632	8,391	9,699	10,739	11,986	13,035	12,722	10,155	11,440	14,507	15,253	14,717	13,899	11,613	10,720	12,145	13,190	13,183
Mexico	4,282	4,084	4,649	5,212	5,870	6,096	6,528	4,591	6,950	8,019	8,585	8,792	8,619	8,351	8,023	8,947	9,242	9,537
United States	99,340	98,027	105,023	115,150	122,686	130,345	132,905	119,158	127,752	145,307	152,625	157,927	161,014	152,509	143,771	153,411	161,374	166,982
Central and South America	7,076	7,540	9,670	10,717	12,773	16,813	21,144	17,680	25,179	30,237	28,333	28,081	25,252	17,243	15,760	17,301	16,350	15,529
Argentina	246	278	347	413	470	586	726	723	880	1,028	1,106	1,069	768	551	345	181	177	162
Brazil	5,685	6,016	7,875	8,610	10,280	13,932	17,703	14,208	21,537	25,925	23,455	23,014	20,883	13,154	12,415	13,965	12,614	12,207
Chile	309	343	418	497	613	640	671	743	915	1,145	1,335	1,527	1,167	1,065	1,109	1,137	1,527	1,425
Colombia	184	184	245	307	362	493	544	469	577	606	630	672	649	477	471	379	385	364
Peru	177	263	225	241	280	244	295	268	343	573	674	716	817	816	801	834	733	641
Other Central and South America	475	457	561	648	768	918	1,205	1,269	928	962	1,134	1,082	968	1,180	619	805	914	731
Europe	160,741	192,096	224,244	233,153	256,863	309,223	338,849	251,180	275,378	322,550	304,823	316,820	325,455	275,720	273,912	291,827	319,704	304,136
EU	129,701	156,140	181,826	187,614	206,996	248,301	273,864	209,225	223,848	261,064	242,971	252,816	262,886	225,868	228,873	245,634	270,819	256,942
France	11,370	13,626	15,437	15,434	16,231	18,665	20,053	15,753	14,931	17,215	16,111	16,058	16,566	13,503	13,091	12,808	13,820	13,176
Germany	58,328	70,504	82,263	84,181	91,901	110,715	122,913	90,526	100,372	118,306	111,598	116,588	122,054	104,313	106,957	115,919	129,240	120,827
Italy	23,882	29,588	34,325	35,264	38,693	45,622	49,375	38,099	39,590	44,371	41,146	43,583	45,513	38,638	40,055	42,636	46,094	42,936
Spain	5,878	7,008	8,099	8,214	8,640	9,686	10,883	9,104	8,233	8,854	8,410	8,687	9,136	7,251	7,120	7,806	8,442	8,158
Other EU	30,243	35,413	41,701	44,522	51,532	63,613	70,641	55,742	60,722	72,318	65,706	67,899	69,618	62,163	61,649	66,465	73,222	71,845
Non-EU	31,040	35,956	42,418	45,539	49,867	60,922	64,985	41,955	51,530	61,486	61,852	64,005	62,568	49,852	45,040	46,194	48,885	47,194
United Kingdom	17,093	19,193	21,304	20,880	21,187	23,695	20,812	12,746	17,956	20,621	22,013	24,045	25,023	23,161	19,017	19,393	20,908	19,243
Russia	4,050	5,357	8,078	10,126	12,577	18,421	22,151	10,729	12,832	15,864	16,300	15,376	12,965	4,867	5,495	5,904	6,217	6,498
Switzerland	7,417	8,266	8,929	9,135	9,770	10,790	12,065	10,404	11,797	14,150	12,316	12,736	13,262	12,356	12,087	12,156	12,729	12,187
Other non-EU	2,479	3,140	4,106	5,398	6,332	8,017	9,957	8,076	8,944	10,851	11,224	11,848	11,319	9,468	8,440	8,740	9,031	9,266
Middle East	2,284	2,538	2,784	3,259	3,792	4,835	5,588	5,290	5,700	6,807	5,428	5,777	6,718	6,330	6,352	6,999	6,453	6,455
Iran	579	687	797	955	1,122	1,516	1,524	1,608	1,802	2,645	1,401	1,204	1,580	1,521	1,366	1,559	1,351	1,289
Israel	719	762	689	737	817	987	1,301	1,229	1,327	1,462	1,121	1,348	1,784	1,479	1,691	1,907	1,940	1,984
Saudi Arabia	365	398	461	530	615	844	949	939	1,132	1,251	1,384	1,570	1,725	1,671	1,515	1,575	1,743	1,556
United Arab Emirates	338	378	441	546	737	841	981	724	799	950	1,065	1,158	1,105	1,135	1,219	1,209	579	774
Other Middle East	283	313	395	490	500	647	833	790	640	500	457	497	524	524	561	749	839	853
Africa	1,578	2,081	2,535	2,722	2,847	3,152	3,106	2,859	3,164	3,203	3,250	3,155	3,103	2,741	2,997	3,315	3,446	3,781
Egypt	81	67	88	102	112	139	176	194	215	270	228	294	414	355	521	611	595	854
Nigeria	4	4	5	6	7	8	10	9	10	18	18	20	22	18	15	13	18	32
South Africa	1,038	1,464	1,850	1,963	1,993	2,180	1,966	1,773	2,004	2,011	2,111	1,905	1,682	1,605	1,585	1,698	1,743	1,802
Other Africa	455	546	593	652	735	825	954	884	935	903	893	936	986	762	876	992	1,089	1,093

Table SKTI-12

Value added of machinery and equipment industry, by region, country, or economy: 2002–19

(Millions of current dollars)

Region, country, or economy	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Asia	152,914	175,941	203,935	226,725	248,654	284,663	347,890	317,002	388,899	462,560	494,297	484,917	500,545	499,201	520,004	572,188	633,673	638,864
China	33,564	41,002	46,834	59,684	75,317	100,212	144,758	150,615	186,474	231,110	254,584	280,127	292,900	297,394	304,797	344,290	391,636	401,285
India	3,329	3,873	5,267	6,118	6,952	8,888	9,732	9,142	10,981	13,128	12,414	9,379	10,824	11,259	11,609	12,769	14,393	14,100
Indonesia	427	418	295	648	841	953	992	1,010	1,253	1,920	2,089	2,268	2,832	3,615	3,925	4,239	4,525	4,442
Japan	97,725	110,423	128,434	132,930	134,069	139,278	158,249	126,817	150,440	171,358	178,371	143,417	139,529	134,235	147,725	150,158	157,917	158,186
Malaysia	837	837	1,004	984	1,324	1,331	1,490	1,239	1,530	1,651	1,772	1,818	1,864	2,068	2,026	1,984	2,152	2,314
Philippines	209	270	279	175	139	166	186	227	212	253	278	293	209	206	266	273	298	279
Singapore	1,509	1,603	1,959	2,210	2,536	3,125	3,680	3,604	4,473	5,612	5,353	5,831	6,805	5,256	4,756	5,332	7,363	5,632
South Korea	11,253	12,988	14,817	18,410	20,999	23,549	21,297	17,968	24,794	27,766	28,642	30,804	33,181	32,747	32,339	39,309	40,211	37,447
Taiwan	3,414	3,751	4,090	4,546	5,215	5,546	5,602	4,536	5,989	6,937	7,646	7,517	8,508	8,351	8,255	9,434	10,291	9,746
Thailand	476	564	694	727	843	1,080	1,251	1,191	1,938	2,003	2,258	2,483	2,708	2,930	3,131	3,015	3,349	3,754
Vietnam	78	98	119	124	181	256	328	356	469	413	484	562	735	724	717	831	956	1,073
Other Asia	92	113	144	169	236	279	325	296	346	409	406	416	451	417	458	555	580	606
Oceania	2,636	3,169	3,979	4,316	4,228	5,364	5,705	4,964	6,289	7,398	7,000	6,698	6,691	4,538	4,848	5,220	5,406	4,924
Australia	2,134	2,523	3,201	3,464	3,501	4,239	4,612	4,105	5,202	6,118	5,711	5,296	5,240	3,296	3,567	3,888	3,988	3,579
New Zealand	502	646	778	852	728	1,125	1,093	859	1,087	1,281	1,289	1,402	1,451	1,242	1,281	1,332	1,418	1,345

EU = European Union.

Note(s):

Value added is the amount contributed by a country, an industry, or other entity to the value of a good or service and excludes purchases of domestic and imported materials and inputs. Detail may not add to total because of rounding. The world total and regional totals do not include all countries and economies due to limitations in data availability. See [Table SKTI-4](#) for a full list of countries and economies in each region for which data are available. China includes Hong Kong. The EU total excludes the United Kingdom (UK) to reflect the new EU country composition following the UK's withdrawal on 1 February 2020. In order to maintain consistency over time, the EU aggregate excludes the UK for the entire time series.

Source(s):

U.S. Bureau of Economic Analysis, Value Added by Industry, accessed 5 October 2021; IHS Markit, special tabulations (2021) of the Comparative Industry Service.

Science and Engineering Indicators

Table SKTI-13

Value added of motor vehicles, trailers, and semi-trailers industry, by region, country, or economy: 2002–19

(Millions of current dollars)

Region, country, or economy	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
World	476,117	537,099	573,567	594,904	623,659	690,219	679,734	552,393	740,792	815,003	856,616	876,462	944,011	925,748	984,792	1,060,968	1,105,874	1,060,766
North America	161,856	168,460	164,448	162,876	163,256	154,941	117,043	68,069	118,516	137,453	153,719	162,149	175,311	188,391	196,809	204,479	205,649	208,339
Canada	19,641	20,287	19,388	19,473	18,311	18,505	13,511	9,733	14,078	14,577	16,080	15,502	15,908	14,593	15,253	14,456	14,309	13,768
Mexico	15,505	13,855	14,662	15,926	19,034	20,078	19,947	14,171	21,055	24,910	28,910	31,265	34,759	36,177	35,373	40,909	43,133	45,180
United States	126,710	134,318	130,398	127,477	125,912	116,358	83,586	44,165	83,384	97,966	108,729	115,383	124,645	137,621	146,182	149,114	148,207	149,391
Central and South America	11,850	13,765	17,430	22,515	28,110	37,628	49,638	44,350	56,202	65,299	54,388	54,134	43,196	28,518	22,792	31,028	29,269	26,747
Argentina	1,033	1,317	1,712	2,292	3,126	4,323	5,606	4,784	5,096	5,871	5,315	5,312	3,181	2,579	2,439	2,900	3,226	2,368
Brazil	8,707	10,542	13,324	17,315	21,537	28,956	39,110	33,949	47,090	54,602	43,660	43,547	35,429	20,195	18,027	24,918	22,198	21,566
Chile	106	110	164	167	208	206	174	158	189	241	263	318	153	251	236	244	222	149
Colombia	393	338	388	508	615	900	692	524	758	902	984	838	861	701	655	614	672	672
Peru	64	72	89	106	119	171	257	281	391	454	543	601	623	618	655	830	882	828
Other Central and South America	1,546	1,386	1,753	2,128	2,505	3,072	3,800	4,654	2,679	3,229	3,622	3,518	2,948	4,174	779	1,523	2,069	1,165
Europe	138,301	169,782	191,259	190,807	207,981	241,862	240,633	177,073	223,617	255,628	237,820	256,570	283,399	256,804	275,628	291,781	307,727	269,710
EU	120,676	151,268	170,842	168,603	184,968	215,463	212,394	157,326	198,494	227,472	208,051	221,278	245,406	222,870	241,984	257,194	272,320	236,346
France	17,499	20,362	23,637	21,600	20,360	22,195	21,834	17,249	19,011	19,640	16,490	16,668	16,697	14,679	14,880	15,011	14,680	12,971
Germany	62,261	79,462	86,619	85,650	97,283	114,024	108,133	80,174	110,419	132,578	126,070	132,780	150,399	134,306	147,421	155,937	165,271	137,307
Italy	9,962	11,633	13,498	13,058	14,750	17,586	17,121	12,856	14,375	14,868	11,920	13,277	13,812	13,227	15,263	17,234	17,601	14,766
Spain	9,877	12,489	14,100	13,525	14,491	16,228	15,642	12,753	11,783	11,816	9,535	11,322	12,948	11,912	12,433	13,283	14,543	13,431
Other EU	21,076	27,321	32,987	34,770	38,085	45,430	49,665	34,295	42,907	48,570	44,035	47,231	51,551	48,746	51,986	55,729	60,224	57,873
Non-EU	17,625	18,514	20,417	22,204	23,013	26,399	28,239	19,747	25,123	28,156	29,770	35,292	37,993	33,935	33,645	34,587	35,407	33,364
United Kingdom	12,706	13,589	14,316	14,544	14,573	15,837	15,637	10,620	14,338	15,146	16,039	20,302	24,585	23,158	22,118	21,730	22,348	19,392
Russia	1,982	1,151	1,577	1,920	2,366	3,202	3,756	3,978	4,501	5,348	6,592	7,024	5,663	3,497	3,782	4,322	4,698	5,500
Switzerland	299	337	358	372	470	517	580	536	728	966	819	852	831	769	678	595	650	661
Other non-EU	2,638	3,436	4,166	5,369	5,605	6,842	8,266	4,614	5,556	6,696	6,320	7,114	6,914	6,511	7,067	7,940	7,711	7,810
Middle East	1,593	2,225	2,305	2,831	3,771	3,863	4,569	5,458	5,761	7,934	5,445	4,853	5,667	5,319	7,817	9,082	8,287	7,922
Iran	936	1,552	1,549	1,991	2,832	2,722	3,234	4,077	4,148	6,088	3,226	2,772	3,638	3,501	5,900	6,643	5,798	5,543
Israel	199	205	192	207	227	271	299	308	324	293	285	300	295	300	334	363	344	303
Saudi Arabia	199	217	252	289	336	352	382	359	434	458	563	645	674	674	602	815	911	838
United Arab Emirates	53	60	70	86	117	133	155	115	126	146	160	157	190	188	205	228	197	176
Other Middle East	205	192	243	257	260	385	499	599	729	949	1,211	979	870	655	777	1,033	1,037	1,061
Africa	1,922	2,552	3,199	3,671	4,088	4,222	3,896	3,318	4,375	4,705	4,628	4,654	4,821	4,899	4,854	5,015	5,612	6,535
Egypt	129	106	139	162	178	221	280	308	396	488	303	401	551	755	635	751	894	1,477
Nigeria	41	45	50	58	68	80	98	89	100	123	181	237	315	263	126	108	203	353
South Africa	1,451	2,100	2,693	3,086	3,368	3,317	2,818	2,248	3,111	3,220	3,354	3,077	2,984	3,002	3,146	3,153	3,401	3,490
Other Africa	300	301	316	365	474	604	700	673	768	874	790	938	971	878	946	1,003	1,114	1,216

Table SKTI-13

Value added of motor vehicles, trailers, and semi-trailers industry, by region, country, or economy: 2002–19

(Millions of current dollars)

Region, country, or economy	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Asia	157,833	176,811	190,786	208,022	212,347	242,841	259,599	249,913	328,189	339,476	396,541	390,556	428,136	439,134	473,593	516,188	548,431	540,716
China	27,593	34,495	32,223	33,942	41,973	56,276	70,412	87,697	120,073	136,634	157,802	180,588	210,213	220,736	246,229	279,935	304,942	299,268
India	1,974	2,959	3,916	4,256	5,104	6,472	6,400	8,909	10,657	13,381	13,248	10,771	14,090	16,091	15,633	17,487	20,770	19,532
Indonesia	5,247	6,604	7,836	6,327	4,735	6,765	9,050	8,665	11,852	11,828	13,449	12,481	12,522	14,540	15,312	15,928	15,893	15,315
Japan	99,916	106,710	116,517	128,064	121,014	127,627	130,966	108,689	141,708	129,536	160,081	131,244	130,700	126,351	135,873	141,511	144,192	148,741
Malaysia	1,690	1,624	1,624	1,224	1,238	1,244	1,579	1,422	2,024	2,288	2,551	2,703	2,855	3,058	3,226	3,394	3,764	4,194
Philippines	424	428	471	547	558	766	965	848	1,310	1,173	1,044	1,579	3,226	3,173	2,053	2,176	2,294	2,183
Singapore	41	135	113	122	140	132	112	128	137	184	166	278	281	256	288	357	333	313
South Korea	12,328	13,793	16,321	19,458	22,519	26,506	20,998	17,895	24,864	29,090	32,382	34,518	36,018	36,146	35,578	34,863	34,267	29,812
Taiwan	3,378	3,442	3,502	4,030	3,180	2,995	2,749	2,654	3,287	3,817	3,811	3,984	4,483	4,645	4,693	4,818	4,637	4,626
Thailand	4,676	5,890	7,224	8,648	10,497	12,555	14,789	11,399	10,368	9,262	9,711	10,021	10,330	10,632	10,864	11,635	13,090	12,898
Vietnam	116	170	185	275	380	553	728	907	914	1,020	1,030	1,253	2,118	1,881	2,200	2,155	2,377	2,600
Other Asia	451	561	855	1,130	1,011	950	851	701	996	1,264	1,267	1,136	1,301	1,626	1,644	1,931	1,871	1,234
Oceania	2,762	3,505	4,140	4,183	4,106	4,861	4,356	4,212	4,131	4,508	4,075	3,545	3,483	2,683	3,299	3,394	899	795
Australia	2,686	3,409	4,028	4,062	4,005	4,704	4,250	4,089	3,950	4,330	3,914	3,328	3,183	2,359	2,908	2,989	507	445
New Zealand	76	96	112	121	101	157	106	124	181	178	161	216	299	324	391	406	392	350

EU = European Union.

Note(s):

Value added is the amount contributed by a country, an industry, or other entity to the value of a good or service and excludes purchases of domestic and imported materials and inputs. Detail may not add to total because of rounding. The world total and regional totals do not include all countries and economies due to limitations in data availability. See [Table SKTI-4](#) for a full list of countries and economies in each region for which data are available. China includes Hong Kong. The EU total excludes the United Kingdom (UK) to reflect the new EU country composition following the UK's withdrawal on 1 February 2020. In order to maintain consistency over time, the EU aggregate excludes the UK for the entire time series.

Source(s):

U.S. Bureau of Economic Analysis, Value Added by Industry, accessed 5 October 2021; IHS Markit, special tabulations (2021) of the Comparative Industry Service.

Science and Engineering Indicators

Table SKTI-14

Value added of air and spacecraft and related machinery industry, by region, country, or economy: 2002–19

(Millions of current dollars)

Region, country, or economy	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
World	103,627	107,921	114,580	133,947	146,610	171,202	178,178	174,360	182,640	196,720	197,786	208,339	219,040	221,393	219,874	233,748	247,522	258,874
North America	61,920	61,542	64,005	76,633	83,323	99,400	98,491	102,078	106,707	111,143	111,299	117,382	125,099	133,892	129,723	137,795	144,087	152,239
Canada	3,665	4,438	4,653	4,978	5,570	6,400	7,284	6,143	6,592	6,801	7,553	8,359	8,848	8,064	6,814	7,228	7,666	8,365
Mexico	533	389	427	480	519	597	678	534	589	745	997	1,180	1,356	1,389	1,324	1,361	1,547	1,600
United States	57,722	56,715	58,925	71,176	77,234	92,402	90,529	95,402	99,527	103,597	102,750	107,842	114,895	124,439	121,585	129,207	134,874	142,274
Central and South America	1,780	1,494	1,924	1,559	1,824	1,953	2,315	1,524	2,165	2,451	2,518	3,084	2,706	2,199	2,020	2,825	1,910	1,744
Argentina	4	5	6	8	8	10	11	10	10	10	9	9	7	7	6	8	7	5
Brazil	1,587	1,288	1,757	1,445	1,705	1,790	2,143	1,300	1,917	2,239	2,215	2,807	2,445	2,006	1,859	2,649	1,722	1,541
Chile	7	13	22	12	10	10	8	8	9	11	12	16	17	9	12	14	14	12
Colombia	24	21	13	16	22	33	38	60	79	80	92	95	91	50	38	52	60	67
Peru	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Other Central and South America	158	167	125	79	79	110	115	146	149	111	190	158	146	128	103	101	107	120
Europe	28,710	32,254	34,774	40,497	43,697	48,598	54,529	47,010	47,646	55,709	57,948	62,107	64,368	57,584	56,990	60,868	63,251	61,594
EU	17,023	18,437	17,787	22,288	23,439	27,029	33,233	30,015	30,362	33,178	34,936	37,822	40,781	36,861	38,210	41,932	45,471	43,849
France	6,316	6,915	5,573	8,208	9,338	10,821	12,955	11,700	10,872	11,371	13,150	14,225	15,316	14,909	15,139	14,240	14,514	13,142
Germany	5,667	5,848	5,871	7,345	6,906	8,027	9,397	8,278	9,715	9,892	10,617	10,935	11,824	10,538	10,878	14,818	17,008	17,244
Italy	2,026	1,783	2,222	2,232	2,442	2,848	4,776	4,340	4,022	4,186	4,072	3,628	4,503	3,587	4,609	4,701	5,384	5,266
Spain	765	1,061	1,183	1,268	1,480	1,516	2,004	1,915	1,787	2,955	2,638	3,934	3,731	2,911	2,606	2,956	3,312	3,137
Other EU	2,250	2,830	2,937	3,235	3,273	3,817	4,102	3,782	3,967	4,775	4,458	5,099	5,407	4,915	4,979	5,217	5,253	5,060
Non-EU	11,687	13,817	16,987	18,210	20,258	21,569	21,296	16,995	17,284	22,531	23,013	24,285	23,587	20,723	18,780	18,935	17,780	17,745
United Kingdom	10,021	11,836	14,321	14,785	15,916	15,779	14,650	10,752	9,728	12,665	11,723	10,909	10,824	12,304	10,460	10,841	9,925	9,194
Russia	1,131	1,410	1,949	2,420	3,104	4,314	4,734	4,241	5,024	6,381	8,092	9,827	9,620	5,475	5,444	5,507	4,936	5,238
Switzerland	168	211	249	261	294	334	400	384	758	1,117	971	1,189	1,243	1,254	996	1,055	1,116	1,083
Other non-EU	368	361	468	743	944	1,142	1,512	1,617	1,773	2,368	2,227	2,360	1,901	1,690	1,880	1,532	1,803	2,230
Middle East	809	1,159	1,296	1,270	1,379	1,421	1,820	1,763	1,818	2,183	1,964	2,037	2,159	2,025	2,149	2,539	2,571	2,755
Iran	197	480	523	440	477	276	327	325	344	505	268	230	302	291	308	361	321	312
Israel	517	569	634	664	711	905	1,171	1,158	1,155	1,273	1,289	1,413	1,459	1,341	1,358	1,572	1,650	1,755
Saudi Arabia	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
United Arab Emirates	63	71	83	103	138	158	184	136	150	177	197	217	220	235	262	269	244	329
Other Middle East	33	39	56	63	53	82	138	143	169	227	210	177	178	158	220	336	357	359
Africa	366	458	492	541	583	434	481	488	527	555	562	581	606	539	704	890	956	986
Egypt	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Nigeria	10	10	11	11	11	12	12	12	11	11	12	13	14	13	10	10	19	33
South Africa	91	121	141	144	150	163	158	187	198	193	183	165	156	161	169	165	164	152
Other Africa	265	327	340	386	422	259	312	289	318	351	366	402	437	364	525	714	773	800

Table SKTI-14

Value added of air and spacecraft and related machinery industry, by region, country, or economy: 2002–19

(Millions of current dollars)

Region, country, or economy	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Asia	9,252	10,024	10,906	12,129	14,370	17,836	19,291	20,208	21,989	22,460	21,207	21,255	22,139	23,288	26,468	27,105	31,992	37,092
China	2,903	3,310	3,382	4,165	5,058	7,425	8,523	8,811	9,349	8,702	9,036	9,529	10,405	11,052	12,186	14,321	18,098	20,811
India	34	49	71	62	73	85	87	27	43	44	153	166	254	203	248	273	329	337
Indonesia	59	76	93	118	97	101	149	156	208	278	249	100	100	74	83	92	93	96
Japan	4,532	4,861	5,363	5,464	6,290	6,945	6,993	7,785	8,257	8,971	7,201	6,337	6,177	7,087	8,487	7,369	7,677	9,299
Malaysia	28	31	33	82	212	206	312	237	337	463	579	691	755	368	406	456	556	627
Philippines	47	49	55	65	69	55	85	76	60	61	73	9	88	176	150	157	165	148
Singapore	884	886	1,089	1,294	1,505	1,774	1,907	1,857	1,998	2,139	2,184	2,263	2,105	1,974	1,851	1,865	2,001	2,485
South Korea	283	281	345	396	570	679	572	577	920	834	946	1,272	1,318	1,348	1,942	1,377	1,842	1,953
Taiwan	211	178	141	110	67	102	134	118	138	167	188	203	230	256	265	270	292	316
Thailand	9	11	12	14	17	20	20	17	25	27	10	8	6	5	12	14	15	17
Vietnam	3	4	4	6	1	1	1	2	1	1	2	7	1	2	2	14	16	21
Other Asia	259	290	319	354	411	443	509	544	653	773	586	670	698	743	835	898	909	982
Oceania	790	991	1,182	1,317	1,435	1,561	1,250	1,288	1,789	2,220	2,287	1,893	1,962	1,866	1,819	1,727	2,754	2,464
Australia	582	723	866	980	1,128	1,191	928	962	1,413	1,818	1,927	1,534	1,587	1,526	1,482	1,330	2,342	2,079
New Zealand	207	269	316	337	307	370	322	326	376	402	361	359	375	340	337	397	412	385

* = amount < \$500,000.

EU = European Union.

Note(s):

Value added is the amount contributed by a country, an industry, or other entity to the value of a good or service and excludes purchases of domestic and imported materials and inputs. Detail may not add to total because of rounding. The world total and regional totals do not include all countries and economies due to limitations in data availability. See [Table SKTI-4](#) for a full list of countries and economies in each region for which data are available. China includes Hong Kong. The EU total excludes the United Kingdom (UK) to reflect the new EU country composition following the UK's withdrawal on 1 February 2020. In order to maintain consistency over time, the EU aggregate excludes the UK for the entire time series.

Source(s):

U.S. Bureau of Economic Analysis, Value Added by Industry, accessed 5 October 2021; IHS Markit, special tabulations (2021) of the Comparative Industry Service.

Science and Engineering Indicators

Table SKTI-15

Value added of railroad, military vehicles, and other transport industry, by region, country, or economy: 2002–19

(Millions of current dollars)

Region, country, or economy	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
World	38,025	42,011	47,484	49,492	52,404	61,919	73,718	71,921	79,948	89,676	91,557	91,922	97,502	95,915	100,076	103,883	114,722	117,161
North America	9,496	10,010	10,738	12,115	12,808	15,082	17,298	14,528	13,952	16,092	16,253	17,260	16,870	16,930	17,541	15,120	15,335	14,988
Canada	1,053	1,205	1,189	1,413	1,608	1,786	1,778	1,523	1,414	1,883	1,828	1,761	1,765	1,768	1,786	1,708	1,853	1,748
Mexico	564	512	647	728	718	686	841	579	585	885	1,215	1,206	1,406	1,785	1,491	1,522	1,738	1,979
United States	7,879	8,293	8,902	9,974	10,482	12,610	14,680	12,427	11,952	13,324	13,210	14,293	13,699	13,378	14,264	11,890	11,744	11,260
Central and South America	720	847	1,243	1,755	2,512	3,416	3,956	3,035	4,342	4,349	3,341	3,237	3,284	2,121	2,111	2,181	1,947	1,747
Argentina	13	15	20	25	27	32	35	33	33	35	32	32	24	21	21	27	20	14
Brazil	568	664	1,062	1,542	2,263	3,126	3,666	2,770	4,043	3,977	2,912	2,778	2,835	1,835	1,848	1,861	1,623	1,428
Chile	61	82	61	78	75	78	64	58	70	82	91	119	130	68	91	101	101	91
Colombia	34	38	59	76	109	130	132	109	135	196	224	232	222	122	97	129	142	154
Peru	2	2	2	3	4	6	8	9	11	13	14	16	16	16	17	20	14	14
Other Central and South America	43	46	39	32	34	44	52	56	51	46	67	60	57	60	38	43	47	46
Europe	8,880	10,923	12,280	12,748	14,268	17,085	20,072	19,492	19,167	21,094	22,134	22,088	20,327	18,107	18,397	19,447	24,113	24,452
EU	7,376	9,131	9,771	10,082	11,281	13,711	15,895	14,844	13,394	13,358	13,019	12,932	14,050	12,292	12,002	11,674	13,338	13,122
France	1,189	1,174	1,556	1,445	1,591	1,835	2,366	2,490	2,500	1,123	1,868	1,970	2,140	1,892	1,845	1,611	1,699	1,699
Germany	1,436	1,971	1,877	2,363	2,428	3,078	2,800	3,002	2,854	3,163	2,852	2,695	3,446	3,411	3,273	3,068	3,605	3,600
Italy	1,866	2,234	2,650	2,213	2,422	2,824	3,348	2,496	2,589	1,976	2,116	1,867	2,290	1,956	1,926	1,931	2,118	2,067
Spain	1,076	1,304	1,324	1,642	1,913	2,331	2,754	2,700	1,886	2,419	2,125	2,075	1,570	1,220	1,321	1,421	1,926	1,767
Other EU	1,810	2,448	2,364	2,419	2,928	3,642	4,626	4,156	3,565	4,676	4,057	4,324	4,604	3,812	3,637	3,643	3,991	3,989
Non-EU	1,503	1,792	2,510	2,665	2,987	3,374	4,178	4,647	5,773	7,736	9,115	9,156	6,278	5,815	6,395	7,773	10,774	11,330
United Kingdom	886	931	1,265	1,171	1,220	1,032	1,357	684	1,038	1,183	1,377	1,583	1,203	1,318	1,049	1,142	2,879	2,898
Russia	195	243	341	449	576	884	1,010	2,037	2,389	3,325	4,398	5,241	3,290	3,024	3,807	5,165	6,382	6,789
Switzerland	197	248	293	308	346	393	471	453	502	804	936	871	940	826	862	786	807	781
Other non-EU	225	370	611	737	844	1,064	1,340	1,473	1,844	2,424	2,404	1,460	844	647	677	680	706	862
Middle East	156	276	306	288	330	264	310	277	297	386	310	312	343	349	407	461	423	453
Iran	79	193	211	177	192	111	132	131	139	203	108	93	122	117	164	185	161	154
Israel	*	*	*	*	2	2	3	3	3	2	3	3	4	3	4	5	5	6
Saudi Arabia	33	34	38	40	43	44	48	46	47	51	58	64	64	66	59	83	86	73
United Arab Emirates	41	46	53	66	89	102	119	88	97	114	127	140	142	152	165	166	147	197
Other Middle East	2	3	4	4	4	6	9	9	11	15	14	12	12	11	15	22	23	23
Africa	218	266	317	338	394	407	458	500	519	492	462	491	489	530	547	557	613	680
Egypt	39	32	42	49	54	67	85	93	90	46	53	65	38	104	85	54	48	55
Nigeria	4	5	5	7	8	10	13	11	13	18	22	29	37	33	27	29	54	93
South Africa	109	144	168	171	179	194	188	223	235	229	218	197	186	192	200	194	191	176
Other Africa	66	85	101	111	152	135	173	172	180	199	169	200	229	201	235	281	322	355

Table SKTI-15

Value added of railroad, military vehicles, and other transport industry, by region, country, or economy: 2002–19

(Millions of current dollars)

Region, country, or economy	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Asia	18,127	19,136	21,734	21,250	21,416	24,697	30,494	33,102	40,182	45,721	47,491	47,662	55,466	57,410	60,601	65,607	71,454	74,098
China	5,695	6,001	6,189	7,341	7,749	9,815	13,392	14,427	17,594	21,187	25,071	27,759	34,107	36,230	37,089	41,092	44,959	46,628
India	915	1,199	1,490	1,774	2,081	2,414	2,469	3,180	4,376	4,335	4,060	3,795	4,339	4,498	4,647	5,203	6,383	6,603
Indonesia	1,823	2,336	2,860	2,163	1,936	2,018	2,975	3,119	4,150	5,554	4,994	4,238	4,239	3,143	3,357	3,684	3,667	3,760
Japan	6,421	6,242	7,685	6,323	5,761	5,671	6,431	7,456	7,902	7,676	7,213	5,928	6,504	7,541	8,778	8,807	9,047	9,434
Malaysia	36	38	48	62	68	75	110	76	138	154	182	166	197	152	123	84	82	93
Philippines	57	59	67	79	84	149	337	373	375	368	524	401	259	181	300	319	341	331
Singapore	356	269	201	57	55	80	99	85	260	318	311	326	371	327	268	264	248	281
South Korea	978	915	891	857	864	881	749	910	1,149	1,094	1,083	946	872	795	837	700	775	690
Taiwan	1,304	1,394	1,410	1,450	1,206	1,618	1,924	1,586	1,746	2,011	2,116	2,155	2,316	2,454	2,444	2,486	2,687	2,910
Thailand	390	501	621	757	951	1,024	1,033	773	1,199	1,371	373	328	298	308	793	883	952	960
Vietnam	124	143	219	322	474	724	742	890	1,042	1,397	1,325	1,390	1,669	1,482	1,596	1,667	1,871	1,886
Other Asia	29	39	53	65	186	228	233	227	250	256	239	229	295	299	368	419	443	523
Oceania	427	552	867	998	677	969	1,128	988	1,489	1,541	1,566	873	722	467	471	511	837	744
Australia	411	530	841	970	652	939	1,102	962	1,458	1,509	1,537	848	712	446	443	492	812	721
New Zealand	17	22	26	27	25	30	26	26	30	33	29	25	10	21	28	19	25	23

* = amount < \$500,000.

EU = European Union.

Note(s):

Value added is the amount contributed by a country, an industry, or other entity to the value of a good or service and excludes purchases of domestic and imported materials and inputs. Detail may not add to total because of rounding. The world total and regional totals do not include all countries and economies due to limitations in data availability. See [Table SKTI-4](#) for a full list of countries and economies in each region for which data are available. China includes Hong Kong. The EU total excludes the United Kingdom (UK) to reflect the new EU country composition following the UK's withdrawal on 1 February 2020. In order to maintain consistency over time, the EU aggregate excludes the UK for the entire time series.

Source(s):

U.S. Bureau of Economic Analysis, Value Added by Industry, accessed 5 October 2021; IHS Markit, special tabulations (2021) of the Comparative Industry Service.

Science and Engineering Indicators

Table SKTI-16

Value added of medical and dental instruments industry, by region, country, or economy: 2002–19

(Millions of current dollars)

Region, country, or economy	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
World	74,973	81,650	86,167	90,381	97,685	108,264	121,790	129,166	134,222	138,186	138,540	143,866	146,180	143,140	148,885	159,254	172,677	175,126
North America	37,534	38,945	40,331	42,373	45,913	48,073	51,882	59,503	60,690	57,427	59,683	58,980	58,697	58,642	62,405	65,307	68,448	70,088
Canada	1,059	1,308	1,405	1,458	1,616	1,734	1,818	1,698	1,962	2,074	2,029	2,199	1,791	1,639	1,690	1,605	1,711	1,764
Mexico	1,547	1,455	1,309	1,426	1,558	1,665	1,927	1,686	1,762	1,857	1,938	2,006	2,048	2,000	1,965	2,125	2,461	2,606
United States	34,928	36,182	37,616	39,489	42,739	44,674	48,137	56,119	56,967	53,495	55,716	54,774	54,858	55,003	58,750	61,577	64,276	65,718
Central and South America	1,176	1,251	1,452	1,724	2,021	2,668	3,410	3,587	4,284	4,546	4,718	4,524	4,254	3,275	3,148	3,685	3,372	3,302
Argentina	12	15	18	20	21	23	29	28	31	32	32	32	23	21	20	24	21	20
Brazil	529	581	696	888	1,097	1,460	2,017	2,096	2,795	3,091	3,193	3,157	3,067	2,216	2,068	2,556	2,146	2,194
Chile	1	2	2	2	2	2	2	3	4	3	3	4	5	6	21	25	29	24
Colombia	175	181	220	244	273	341	380	325	349	342	328	198	193	278	337	308	328	273
Peru	289	296	327	372	411	583	666	792	767	750	926	896	743	542	522	576	633	583
Other Central and South America	170	177	189	197	216	258	316	343	338	328	235	235	223	211	180	196	215	208
Europe	20,710	25,257	27,538	27,948	30,213	34,562	38,779	36,416	36,852	40,289	35,921	38,568	38,964	37,463	37,868	40,910	45,345	43,715
EU	15,971	19,419	21,304	21,357	22,913	26,057	29,683	28,500	28,773	31,364	27,376	29,714	30,509	30,252	30,732	33,433	37,178	35,618
France	2,381	2,981	3,301	3,242	3,234	3,600	3,947	3,925	3,673	3,784	3,352	3,785	3,842	3,136	3,216	3,309	3,395	3,238
Germany	5,104	6,630	7,183	7,293	8,099	9,076	10,114	9,696	10,466	12,281	10,550	11,205	11,312	9,867	9,832	11,579	12,712	11,990
Italy	3,080	3,345	3,654	3,709	3,978	4,603	5,037	4,548	4,890	4,755	3,906	4,169	4,257	3,756	3,982	4,481	5,012	5,000
Spain	802	1,007	1,161	1,135	1,260	1,512	1,896	1,755	1,527	1,559	1,454	1,458	1,461	1,163	1,167	1,264	1,478	1,484
Other EU	4,604	5,455	6,005	5,977	6,342	7,265	8,689	8,576	8,217	8,985	8,115	9,096	9,637	12,329	12,534	12,800	14,581	13,905
Non-EU	4,739	5,838	6,234	6,591	7,300	8,505	9,096	7,916	8,079	8,925	8,546	8,855	8,455	7,210	7,136	7,477	8,167	8,097
United Kingdom	3,156	3,844	3,927	3,885	4,193	4,846	4,473	4,462	4,309	4,429	4,227	4,102	4,110	3,925	3,639	3,583	3,919	3,840
Russia	320	521	756	1,029	1,267	1,520	1,938	1,156	1,333	1,775	1,704	1,868	1,514	676	721	1,067	1,273	1,365
Switzerland	950	1,086	1,131	1,161	1,246	1,439	1,775	1,623	1,664	1,863	1,795	2,002	2,036	1,896	1,996	2,051	2,174	2,057
Other non-EU	313	387	420	516	594	699	910	676	773	857	820	882	795	714	779	776	801	835
Middle East	262	296	297	325	374	438	537	530	604	689	608	613	633	604	629	725	751	798
Iran	37	44	47	49	67	80	104	133	159	220	113	102	129	125	113	130	116	113
Israel	113	114	108	112	101	106	114	97	100	92	91	105	114	103	111	127	129	139
Saudi Arabia	16	22	27	30	35	36	45	47	55	66	76	95	98	96	86	119	138	128
United Arab Emirates	26	30	34	42	56	65	80	62	67	75	81	87	87	99	96	108	104	139
Other Middle East	70	87	81	94	115	151	195	191	223	236	246	224	205	181	223	242	265	279
Africa	1,241	1,661	1,940	2,147	2,328	2,651	2,786	2,607	2,849	3,030	2,786	2,862	2,829	2,716	2,381	2,376	2,735	3,179
Egypt	9	7	9	11	12	15	20	23	27	149	28	16	15	309	58	72	95	136
Nigeria	98	108	118	136	160	191	245	236	257	351	465	668	854	694	479	410	484	800
South Africa	736	1,063	1,287	1,389	1,439	1,602	1,612	1,538	1,663	1,526	1,394	1,200	1,152	966	1,028	1,051	1,191	1,239
Other Africa	398	483	525	611	718	843	910	809	902	1,003	899	977	807	747	816	843	964	1,004

Table SKTI-16

Value added of medical and dental instruments industry, by region, country, or economy: 2002–19

(Millions of current dollars)

Region, country, or economy	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Asia	13,900	14,048	14,392	15,642	16,679	19,654	24,160	26,162	28,509	31,746	34,265	37,754	40,268	39,928	41,928	45,681	51,439	53,508
China	5,724	5,450	5,611	6,832	8,023	10,130	13,589	15,000	16,973	19,151	21,627	25,421	27,191	27,118	27,813	31,068	35,758	36,152
India	271	333	488	526	590	763	794	1,025	1,189	1,458	1,422	1,436	1,813	1,522	1,831	1,893	1,677	1,734
Indonesia	119	135	202	258	340	361	432	442	497	513	523	601	724	905	908	930	955	1,101
Japan	5,094	5,276	5,174	5,011	4,365	4,613	5,605	5,798	5,293	5,999	5,881	5,015	4,839	4,525	4,890	4,817	5,049	5,555
Malaysia	107	114	126	124	137	166	190	248	240	285	334	379	395	398	391	386	442	491
Philippines	24	29	28	32	45	44	26	38	41	43	35	12	10	10	14	13	15	11
Singapore	252	259	214	247	320	429	431	495	699	756	823	943	1,112	1,113	1,417	1,568	1,837	2,529
South Korea	992	1,045	1,056	1,178	1,329	1,492	1,295	1,098	1,306	1,395	1,397	1,507	1,580	1,628	1,753	1,841	2,174	2,083
Taiwan	640	677	699	668	672	689	731	717	811	872	922	1,016	1,077	1,123	1,238	1,310	1,475	1,614
Thailand	544	563	585	533	635	718	759	851	1,015	894	904	966	953	981	999	1,080	1,184	1,167
Vietnam	51	63	81	86	99	115	155	292	269	206	230	267	372	414	464	535	620	808
Other Asia	82	103	128	148	124	134	153	159	176	173	166	191	204	191	209	239	253	263
Oceania	150	191	217	222	158	218	237	361	433	460	558	566	535	513	525	570	587	535
Australia	124	155	176	177	122	172	196	320	396	420	517	521	490	472	477	521	538	487
New Zealand	26	36	40	45	35	45	41	41	38	40	41	45	45	41	48	48	49	48

EU = European Union.

Note(s):

Value added is the amount contributed by a country, an industry, or other entity to the value of a good or service and excludes purchases of domestic and imported materials and inputs. Detail may not add to total because of rounding. The world total and regional totals do not include all countries and economies due to limitations in data availability. See [Table SKTI-4](#) for a full list of countries and economies in each region for which data are available. China includes Hong Kong. The EU total excludes the United Kingdom (UK) to reflect the new EU country composition following the UK's withdrawal on 1 February 2020. In order to maintain consistency over time, the EU aggregate excludes the UK for the entire time series.

Source(s):

U.S. Bureau of Economic Analysis, Value Added by Industry, accessed 5 October 2021; IHS Markit, special tabulations, October 2021.

Science and Engineering Indicators

Table SKTI-17

Value added of IT and other information services industry, by region, country, or economy: 2002–19

(Millions of current dollars)

Region, country, or economy	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
World	510,374	569,022	635,123	680,670	740,660	831,878	933,632	922,926	992,002	1,123,653	1,163,837	1,224,034	1,298,267	1,281,320	1,363,281	1,473,119	1,619,127	1,720,742
North America	180,800	190,305	209,993	221,340	247,849	251,526	284,653	295,627	327,279	366,137	385,744	415,432	444,618	481,503	527,966	566,124	629,640	690,936
Canada	8,611	10,649	12,016	13,468	15,871	18,009	19,117	19,400	22,157	25,325	26,453	27,326	27,740	25,628	26,679	29,459	31,862	33,791
Mexico	824	792	908	1,055	1,091	1,199	1,286	1,087	1,164	1,195	1,220	1,232	1,339	1,210	1,193	1,318	1,317	1,366
United States	171,364	178,864	197,069	206,818	230,887	232,318	264,249	275,140	303,958	339,617	358,071	386,873	415,539	454,665	500,094	535,347	596,461	655,779
Central and South America	7,908	8,296	10,638	14,453	17,329	22,273	26,890	28,131	34,589	41,750	41,231	43,543	42,803	37,668	35,622	40,456	38,604	37,454
Argentina	1,108	1,241	1,553	1,862	2,183	2,765	3,472	3,389	4,013	4,829	5,195	5,537	4,979	5,866	5,150	6,148	4,920	4,132
Brazil	3,790	4,215	5,778	8,088	9,994	13,370	15,973	17,283	22,029	26,814	24,599	26,078	26,173	20,458	20,755	23,110	21,902	22,307
Chile	606	573	728	950	1,156	1,359	1,800	1,669	2,139	2,767	3,009	3,172	2,961	2,845	3,135	3,527	3,326	3,125
Colombia	769	736	921	1,719	1,915	2,412	2,778	2,563	3,179	3,542	3,982	4,006	3,978	2,980	2,823	3,170	3,358	3,193
Peru	467	493	540	593	677	728	832	791	895	988	1,095	1,164	1,172	1,076	1,081	1,218	1,274	1,329
Other Central and South America	1,169	1,040	1,119	1,240	1,405	1,639	2,035	2,436	2,334	2,810	3,350	3,586	3,540	4,444	2,679	3,284	3,823	3,367
Europe	173,315	208,590	239,820	256,642	276,477	335,194	364,644	330,888	332,725	375,481	373,228	399,403	422,867	379,311	394,365	431,321	484,998	512,955
EU	124,892	149,393	170,893	180,184	194,747	234,728	264,740	246,099	241,523	272,968	265,130	289,712	305,963	271,680	290,276	321,213	362,132	380,046
France	30,770	36,753	41,779	42,704	46,914	54,397	60,602	55,141	53,984	58,366	56,061	58,740	62,127	54,689	58,484	64,384	72,555	74,167
Germany	33,481	38,534	44,465	47,412	50,759	62,928	68,418	63,183	61,708	75,578	74,886	85,822	91,366	78,017	82,232	88,539	98,797	104,293
Italy	19,907	23,858	25,655	26,112	26,762	31,058	34,431	33,690	32,512	35,301	32,617	34,226	35,557	31,275	33,369	36,238	37,545	37,780
Spain	8,336	10,673	12,166	12,858	14,006	16,431	18,916	18,353	16,448	17,792	16,648	17,935	18,533	15,721	16,444	18,448	20,773	21,252
Other EU	32,397	39,574	46,828	51,098	56,306	69,915	82,374	75,732	76,871	85,930	84,918	92,989	98,381	91,977	99,746	113,605	132,462	142,555
Non-EU	48,423	59,198	68,927	76,457	81,731	100,465	99,903	84,789	91,202	102,513	108,097	109,691	116,904	107,631	104,089	110,108	122,866	132,909
United Kingdom	37,027	46,531	54,129	59,393	62,749	77,089	70,933	57,545	60,550	66,015	67,782	67,782	76,783	73,469	71,184	74,857	86,140	94,448
Russia	1,168	1,451	1,598	2,395	3,356	4,973	7,287	5,981	7,239	9,418	12,474	12,343	10,924	7,322	5,948	7,137	7,467	7,956
Switzerland	6,931	7,391	8,420	8,767	9,106	9,626	11,256	11,710	12,800	15,311	15,263	16,028	16,563	16,246	16,128	16,370	16,898	17,052
Other non-EU	3,297	3,825	4,780	5,903	6,519	8,777	10,427	9,554	10,612	11,768	12,579	13,538	12,634	10,593	10,829	11,743	12,360	13,453
Middle East	8,135	8,406	9,258	10,343	11,864	14,655	17,620	18,360	19,321	21,984	21,221	24,450	28,611	29,426	32,641	35,262	36,006	37,999
Iran	1,223	1,480	1,794	2,139	2,721	3,742	4,541	4,745	5,294	5,824	3,130	2,923	3,734	3,947	4,307	4,572	2,828	2,220
Israel	4,857	4,702	4,889	5,359	5,821	6,725	8,147	8,669	8,713	10,317	11,267	13,720	16,202	16,349	19,003	20,977	23,159	25,265
Saudi Arabia	851	871	950	1,007	1,085	1,196	1,424	1,687	1,933	2,152	2,789	3,398	3,758	3,928	3,996	4,134	4,324	4,686
United Arab Emirates	905	1,040	1,266	1,446	1,702	2,313	2,724	2,450	2,529	2,681	2,946	3,195	3,565	3,791	3,916	4,122	4,196	4,327
Other Middle East	299	314	359	391	535	678	784	808	852	1,011	1,090	1,214	1,352	1,412	1,419	1,457	1,499	1,501
Africa	2,116	2,534	3,260	4,596	5,184	6,294	10,323	10,014	11,035	10,466	11,452	12,336	12,318	11,300	9,691	8,581	9,721	11,460
Egypt	189	152	145	203	249	297	361	424	481	1,228	1,627	1,622	1,735	1,825	1,608	1,143	1,406	1,741
Nigeria	958	1,097	1,593	2,707	3,068	3,826	7,664	7,161	7,845	6,293	7,006	7,835	7,684	6,829	5,403	4,539	5,194	6,484
South Africa	205	344	459	522	558	634	592	683	944	1,035	908	825	808	725	667	793	846	819
Other Africa	763	940	1,063	1,164	1,309	1,537	1,706	1,746	1,766	1,909	1,911	2,054	2,091	1,921	2,013	2,106	2,275	2,417

Table SKTI-17

Value added of IT and other information services industry, by region, country, or economy: 2002–19

(Millions of current dollars)

Region, country, or economy	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Asia	129,726	140,551	150,734	161,029	168,066	184,483	211,070	221,335	242,985	278,162	298,345	297,491	315,837	315,370	334,629	359,201	389,313	399,551
China	8,957	9,202	10,196	13,306	17,554	24,557	33,721	38,897	46,312	59,528	74,252	90,842	109,131	112,602	112,527	127,208	150,814	149,643
India	7,345	8,682	10,774	13,014	15,129	19,804	23,177	25,769	32,767	38,233	35,560	40,904	45,115	50,313	54,445	61,893	62,337	65,862
Indonesia	795	1,015	1,165	1,319	1,641	1,853	2,159	2,483	3,423	3,999	4,091	4,077	3,789	3,680	4,104	4,771	4,972	5,715
Japan	98,428	106,153	111,238	112,169	108,281	109,351	124,522	129,072	131,709	143,914	148,892	125,293	118,896	107,047	119,628	116,834	120,649	124,853
Malaysia	385	415	445	610	680	819	938	987	1,229	1,354	1,510	1,654	1,741	1,621	1,662	1,779	2,097	2,103
Philippines	489	508	554	633	769	956	1,148	1,153	1,336	1,521	1,773	1,665	1,699	1,801	2,190	2,277	2,458	2,759
Singapore	411	424	431	778	949	1,249	1,544	1,679	2,002	2,771	3,110	3,459	3,649	3,309	3,594	3,909	4,302	4,486
South Korea	9,255	10,184	11,471	14,413	17,419	19,528	16,809	14,830	17,018	19,029	20,810	20,542	22,052	24,579	25,326	28,137	29,193	29,830
Taiwan	2,359	2,472	2,655	2,854	3,173	3,609	3,928	3,712	3,975	4,125	4,291	4,710	5,252	5,624	6,095	6,853	7,356	7,935
Thailand	766	905	1,159	1,207	1,369	1,562	1,731	1,502	1,795	2,142	2,355	2,561	2,522	2,637	2,649	2,942	2,546	3,724
Vietnam	58	64	72	75	81	95	118	128	194	188	187	208	222	211	225	241	266	283
Other Asia	477	527	575	653	1,021	1,100	1,275	1,122	1,225	1,358	1,516	1,575	1,769	1,946	2,184	2,358	2,323	2,359
Oceania	8,374	10,339	11,421	12,268	13,892	17,454	18,433	18,571	24,067	29,673	32,617	31,379	31,212	26,742	28,367	32,174	30,846	30,386
Australia	7,635	9,385	10,327	11,063	12,721	15,832	16,880	17,120	22,414	27,737	30,651	29,226	28,950	24,821	26,372	30,031	28,596	28,017
New Zealand	739	954	1,094	1,205	1,171	1,622	1,553	1,450	1,653	1,936	1,966	2,154	2,261	1,921	1,996	2,144	2,250	2,369

EU = European Union; IT = information technology.

Note(s):

Value added is the amount contributed by a country, an industry, or other entity to the value of a good or service and excludes purchases of domestic and imported materials and inputs. Detail may not add to total because of rounding. The world total and regional totals do not include all countries and economies due to limitations in data availability. See [Table SKTI-4](#) for a full list of countries and economies in each region for which data are available. China includes Hong Kong. The EU total excludes the United Kingdom (UK) to reflect the new EU country composition following the UK's withdrawal on 1 February 2020. In order to maintain consistency over time, the EU aggregate excludes the UK for the entire time series.

Source(s):

U.S. Bureau of Economic Analysis, Value Added by Industry, accessed 5 October 2021; IHS Markit, special tabulations (2021) of the Comparative Industry Service.

Science and Engineering Indicators

Table SKTI-18

Value added of software publishing industry, by region, country, or economy: 2002–19

(Millions of current dollars)

Region, country, or economy	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
World	101,149	111,002	128,760	141,473	146,199	177,252	189,842	188,693	206,329	232,283	235,115	254,348	270,752	271,446	287,902	319,604	358,121	390,486
North America	59,813	64,487	73,824	82,903	83,300	103,844	108,640	109,781	120,675	134,227	141,926	154,871	163,723	170,310	182,355	201,799	223,045	246,929
Canada	1,895	2,152	2,680	3,207	3,816	4,430	4,643	4,159	4,835	5,438	5,738	6,066	6,238	5,348	5,360	5,871	6,281	6,702
Mexico	459	407	428	481	528	602	663	574	668	768	773	872	913	851	801	868	872	899
United States	57,460	61,927	70,716	79,215	78,956	98,812	103,334	105,048	115,173	128,020	135,414	147,933	156,572	164,111	176,194	195,060	215,892	239,328
Central and South America	1,073	1,195	1,541	1,975	2,311	2,951	3,843	3,856	4,449	5,288	4,757	4,437	4,362	3,637	2,943	3,467	3,470	3,335
Argentina	59	81	109	133	154	191	245	257	313	374	408	414	418	508	454	554	453	389
Brazil	639	744	972	1,277	1,496	1,931	2,554	2,553	3,031	3,550	2,965	2,655	2,695	1,750	1,580	1,802	1,735	1,803
Chile	106	110	150	127	147	170	174	175	198	237	227	237	196	147	151	165	155	148
Colombia	84	73	78	165	191	258	342	300	372	463	435	392	343	265	255	289	307	295
Peru	42	54	62	70	82	89	107	112	137	171	154	153	137	129	133	154	165	176
Other Central and South America	143	134	170	204	240	312	420	459	397	494	568	587	573	838	371	503	655	523
Europe	25,291	28,906	34,475	36,177	39,039	47,274	52,825	49,701	52,468	59,527	56,356	61,738	66,386	63,980	66,549	75,360	87,499	94,873
EU	17,798	20,654	24,594	25,801	28,185	34,127	39,719	38,420	40,133	45,533	42,199	46,454	49,743	48,294	51,528	59,615	70,451	75,629
France	4,067	4,737	5,509	5,753	6,362	7,332	8,294	7,957	8,199	9,321	8,849	9,762	10,581	9,187	9,843	11,165	12,070	12,159
Germany	4,231	4,845	5,671	5,899	6,382	8,008	9,920	9,256	9,563	11,608	10,865	11,891	12,253	10,419	10,977	11,901	12,469	12,323
Italy	1,934	2,082	2,393	2,509	2,674	3,097	3,365	3,115	3,384	3,259	2,466	2,526	2,613	2,097	2,338	2,518	2,779	2,498
Spain	1,432	1,679	1,901	2,133	2,222	2,451	2,736	2,643	2,504	2,577	2,094	1,992	2,024	1,895	1,903	2,099	2,291	2,453
Other EU	6,134	7,311	9,119	9,507	10,545	13,239	15,404	15,449	16,484	18,769	17,924	20,284	22,272	24,696	26,467	31,933	40,843	46,196
Non-EU	7,493	8,251	9,882	10,376	10,853	13,146	13,106	11,281	12,335	13,994	14,158	15,283	16,642	15,687	15,020	15,746	17,048	19,244
United Kingdom	5,805	6,265	7,562	7,751	7,947	9,657	9,214	7,842	8,399	9,288	9,386	10,090	11,687	11,227	10,499	10,649	11,527	13,037
Russia	270	396	472	571	739	897	1,052	679	812	1,124	1,354	1,459	1,225	1,184	1,260	1,577	1,740	1,945
Switzerland	519	592	657	687	696	742	845	856	955	1,133	1,021	1,092	1,171	1,184	1,228	1,299	1,390	1,459
Other non-EU	899	999	1,189	1,367	1,471	1,851	1,995	1,904	2,168	2,449	2,397	2,643	2,560	2,092	2,033	2,220	2,391	2,803
Middle East	401	381	416	468	530	621	730	686	764	872	868	951	995	1,073	1,145	1,244	1,292	1,371
Iran	57	35	21	35	41	40	48	55	64	92	51	48	64	69	80	89	57	46
Israel	211	204	222	246	263	298	348	306	327	340	333	375	351	400	429	473	518	562
Saudi Arabia	18	20	23	27	33	48	48	50	65	79	84	91	105	100	103	109	115	126
United Arab Emirates	39	40	47	54	65	73	91	83	93	114	126	138	153	168	184	203	214	227
Other Middle East	76	83	103	106	129	162	194	192	214	247	274	300	323	336	349	370	389	410
Africa	138	181	227	239	280	334	328	317	401	440	477	532	573	502	484	506	569	619
Egypt	8	8	10	12	16	24	32	39	47	57	74	77	119	93	85	63	79	103
Nigeria	7	7	9	12	16	22	28	27	32	46	53	69	86	87	82	76	85	95
South Africa	92	130	170	170	200	229	208	189	250	262	278	281	251	208	193	236	258	257
Other Africa	31	35	38	45	49	59	61	62	73	75	72	105	117	114	123	131	147	164

Table SKTI-18

Value added of software publishing industry, by region, country, or economy: 2002–19

(Millions of current dollars)

Region, country, or economy	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Asia	12,663	13,428	15,336	16,597	17,315	17,723	19,075	20,147	22,818	26,522	25,632	27,117	30,148	28,117	30,918	33,947	39,110	40,179
China	1,455	1,640	2,034	2,283	2,472	2,873	3,305	3,532	3,854	4,928	5,742	6,798	8,806	8,806	9,048	10,512	12,552	12,280
India	274	332	314	484	581	770	870	818	1,070	1,378	1,300	1,361	1,328	1,368	1,466	1,663	1,671	1,793
Indonesia	163	167	195	204	284	266	319	360	471	496	461	459	447	403	443	514	532	609
Japan	7,085	7,567	8,598	8,557	8,043	7,372	8,377	9,055	9,607	10,320	9,039	7,632	7,228	6,500	7,396	7,150	7,406	7,309
Malaysia	153	176	200	178	264	228	270	245	505	665	578	523	584	505	521	566	664	662
Philippines	40	17	17	19	21	26	3	3	3	4	4	3	7	7	9	10	11	13
Singapore	96	93	97	161	177	80	81	84	108	141	137	134	128	102	97	107	119	126
South Korea	2,712	2,715	3,068	3,820	4,576	5,149	4,770	4,941	5,915	7,099	6,957	8,706	10,060	8,890	10,345	11,676	14,321	15,515
Taiwan	617	647	725	794	787	824	920	931	1,082	1,266	1,187	1,218	1,222	1,167	1,177	1,289	1,362	1,311
Thailand	19	23	30	32	40	48	58	57	69	78	76	85	85	87	88	99	85	127
Vietnam	6	7	8	9	10	12	13	14	9	8	7	7	8	8	9	10	11	13
Other Asia	41	45	51	56	61	76	88	106	125	139	145	190	245	275	318	351	376	421
Oceania	1,770	2,424	2,941	3,113	3,424	4,505	4,401	4,205	4,755	5,408	5,099	4,702	4,565	3,826	3,509	3,280	3,135	3,181
Australia	1,571	2,151	2,591	2,723	3,092	4,121	4,075	3,868	4,426	4,969	4,624	4,170	4,000	3,355	3,037	2,828	2,724	2,753
New Zealand	200	273	350	390	332	384	326	337	329	439	476	532	565	471	472	452	411	428

EU = European Union.

Note(s):

Value added is the amount contributed by a country, an industry, or other entity to the value of a good or service and excludes purchases of domestic and imported materials and inputs. Detail may not add to total because of rounding. The world total and regional totals do not include all countries and economies due to limitations in data availability. See [Table SKTI-4](#) for a full list of countries and economies in each region for which data are available. China includes Hong Kong. The EU total excludes the United Kingdom (UK) to reflect the new EU country composition following the UK's withdrawal on 1 February 2020. In order to maintain consistency over time, the EU aggregate excludes the UK for the entire time series.

Source(s):

U.S. Bureau of Economic Analysis, Value Added by Industry, accessed 5 October 2021; IHS Markit, special tabulations, October 2021.

Science and Engineering Indicators

Table SKTI-19

Value added of scientific research and development industry, by region, country, or economy: 2002–19

(Millions of current dollars)

Region, country, or economy	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
World	218,319	244,695	277,119	298,306	324,684	371,645	415,364	414,725	459,522	517,504	533,916	564,963	602,459	574,171	581,859	632,846	685,477	701,348
North America	74,773	75,136	76,699	79,342	80,223	80,366	89,725	90,894	95,766	102,061	102,635	104,628	109,880	121,228	119,057	122,634	134,698	145,647
Canada	2,147	2,564	2,944	3,368	3,852	4,473	4,660	4,471	4,832	5,556	5,356	5,553	5,307	4,464	4,326	4,636	4,826	4,876
Mexico	1,117	1,252	1,222	1,388	1,369	1,477	1,550	1,401	1,716	1,757	1,705	1,311	1,433	1,335	1,224	1,289	1,318	1,422
United States	71,509	71,320	72,533	74,586	75,002	74,416	83,515	85,022	89,218	94,748	95,574	97,764	103,140	115,428	113,507	116,709	128,554	139,349
Central and South America	5,611	5,519	6,482	7,365	8,653	10,964	13,383	14,384	16,254	19,355	21,805	23,119	22,768	23,896	20,102	23,376	22,703	20,659
Argentina	1,611	1,803	2,257	2,707	3,173	4,019	4,977	5,032	5,943	7,133	7,802	8,339	7,500	8,786	7,740	9,270	7,440	6,244
Brazil	316	280	375	554	790	1,199	1,436	1,477	1,725	2,145	2,171	1,920	2,091	1,615	1,627	2,006	1,712	1,601
Chile	38	34	46	54	71	84	95	107	123	150	173	187	139	221	253	267	289	265
Colombia	978	931	1,147	1,124	1,295	1,757	2,129	2,274	2,940	3,440	4,030	4,383	4,813	3,594	3,330	3,583	3,863	3,742
Peru	477	464	500	541	611	721	918	969	1,183	1,356	1,583	1,727	1,705	1,622	1,615	1,779	1,878	1,999
Other Central and South America	2,191	2,007	2,158	2,384	2,713	3,183	3,827	4,526	4,340	5,131	6,045	6,562	6,520	8,058	5,536	6,471	7,522	6,808
Europe	78,169	96,307	114,398	120,410	129,571	153,670	170,637	158,570	169,039	184,295	179,760	196,321	197,844	167,471	169,092	185,195	197,704	202,293
EU	58,286	72,792	84,040	87,460	92,832	107,897	119,328	114,262	115,082	123,571	117,558	129,388	132,170	115,964	119,861	130,842	141,219	142,878
France	21,929	26,570	30,046	30,428	31,938	36,478	40,338	39,845	39,503	42,738	40,479	43,417	44,512	37,186	37,775	40,636	44,068	45,161
Germany	12,733	16,100	17,981	18,265	18,399	21,370	23,890	23,528	22,905	25,007	24,535	26,693	27,624	25,251	25,124	27,618	29,255	28,590
Italy	11,224	14,271	16,390	17,290	18,914	21,380	23,188	21,990	21,406	21,908	20,272	21,111	20,661	17,361	17,263	18,057	19,276	20,204
Spain	2,276	2,953	3,385	3,712	4,002	4,640	5,367	5,392	5,472	6,210	6,035	6,453	6,573	5,756	5,602	5,893	6,426	6,408
Other EU	10,123	12,898	16,237	17,764	19,579	24,029	26,545	23,507	25,797	27,708	26,237	31,714	32,800	30,409	34,097	38,637	42,194	42,515
Non-EU	19,883	23,515	30,358	32,950	36,739	45,772	51,309	44,308	53,957	60,724	62,202	66,933	65,674	51,507	49,232	54,353	56,485	59,415
United Kingdom	11,161	12,959	16,766	17,646	18,122	22,484	22,101	17,853	20,600	19,903	18,792	15,754	17,858	17,837	16,972	17,908	19,398	20,291
Russia	4,038	5,048	6,908	7,973	10,566	13,054	17,237	14,574	20,309	26,823	28,163	34,728	31,864	18,576	17,409	20,906	21,566	22,772
Switzerland	2,409	2,694	3,043	3,051	3,000	3,259	3,545	4,034	4,149	4,682	4,753	4,970	5,254	5,100	5,024	5,137	5,399	5,450
Other non-EU	2,276	2,814	3,642	4,280	5,051	6,975	8,427	7,848	8,899	9,317	10,493	11,483	10,698	9,994	9,827	10,402	10,122	10,902
Middle East	5,696	6,466	7,591	8,658	10,537	13,679	16,119	16,817	18,430	20,422	17,348	18,339	21,622	22,338	23,298	24,469	22,128	22,107
Iran	2,027	2,453	2,974	3,546	4,510	6,202	7,454	8,327	9,385	10,373	5,689	5,321	6,862	7,222	7,839	8,281	5,104	3,998
Israel	1,100	1,195	1,293	1,379	1,565	1,755	2,111	2,019	2,254	2,595	3,109	3,393	4,226	4,035	3,980	4,395	4,768	5,255
Saudi Arabia	867	903	1,009	1,105	1,218	1,348	1,536	1,823	2,006	2,171	2,677	3,097	3,345	3,454	3,551	3,735	4,005	4,361
United Arab Emirates	1,316	1,512	1,840	2,102	2,473	3,362	3,842	3,405	3,516	3,717	4,094	4,516	4,976	5,278	5,483	5,801	5,919	6,126
Other Middle East	387	403	475	526	770	1,012	1,177	1,243	1,269	1,565	1,779	2,012	2,213	2,349	2,444	2,257	2,332	2,368
Africa	2,860	3,810	5,308	6,731	7,825	9,189	10,044	10,546	12,232	15,097	16,115	16,573	17,846	16,677	15,463	14,907	16,087	16,856
Egypt	275	221	211	295	362	432	505	608	691	1,738	2,303	2,295	2,469	2,611	2,318	1,661	2,060	2,581
Nigeria	255	283	1,087	1,911	2,599	3,292	4,009	3,635	4,076	5,061	6,118	6,938	7,964	7,455	6,532	5,705	5,898	6,112
South Africa	1,180	1,884	2,394	2,759	2,881	3,118	2,922	3,535	4,637	5,145	4,513	4,117	4,083	3,681	3,416	4,096	4,396	4,289
Other Africa	1,149	1,421	1,616	1,767	1,983	2,347	2,608	2,767	2,828	3,153	3,180	3,223	3,329	2,930	3,197	3,445	3,733	3,875

Table SKTI-19

Value added of scientific research and development industry, by region, country, or economy: 2002–19

(Millions of current dollars)

Region, country, or economy	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Asia	45,566	49,872	56,788	64,302	74,878	87,453	97,466	105,125	124,597	148,499	167,203	179,144	207,023	200,947	211,251	235,168	264,989	267,612
China	9,445	9,444	11,148	14,332	17,805	23,183	29,422	37,390	44,646	57,632	70,568	77,192	87,091	94,168	94,340	105,992	124,724	123,580
India	2,617	3,092	3,851	4,636	5,385	7,049	8,234	9,312	11,940	13,840	17,654	20,780	25,197	27,198	32,125	37,874	40,978	43,186
Indonesia	660	851	949	1,076	1,370	1,547	1,737	1,920	2,578	3,071	3,179	3,165	3,155	3,176	3,558	4,006	4,252	4,917
Japan	13,961	14,708	15,703	14,216	13,592	13,461	15,913	16,320	17,478	19,798	19,105	15,540	14,992	13,343	15,472	14,854	15,411	15,745
Malaysia	459	494	530	726	810	975	1,126	1,209	1,498	1,712	1,899	2,072	2,184	2,082	2,145	2,298	2,729	2,707
Philippines	711	738	805	920	1,118	1,389	1,670	1,760	2,075	2,392	2,786	2,625	2,668	2,775	3,351	3,472	3,747	4,210
Singapore	699	737	781	870	1,035	1,278	1,625	1,688	2,171	2,680	2,954	3,221	3,366	3,187	3,298	3,475	3,752	3,852
South Korea	12,849	15,147	17,745	21,417	25,847	29,632	28,103	25,758	31,000	34,579	34,903	39,338	51,972	38,106	39,073	43,175	48,027	47,732
Taiwan	1,950	2,174	2,457	2,861	3,318	3,637	3,919	3,884	4,400	4,979	5,301	5,646	6,045	6,100	6,381	7,072	7,517	7,676
Thailand	791	930	1,110	1,262	1,480	1,822	1,997	1,780	2,214	2,518	3,020	3,156	2,967	2,736	2,595	2,925	3,491	3,637
Vietnam	212	231	259	282	313	365	461	506	544	614	712	816	874	909	966	1,022	1,098	1,166
Other Asia	1,213	1,327	1,450	1,703	2,803	3,115	3,261	3,597	4,055	4,683	5,122	5,592	6,513	7,166	7,946	9,002	9,263	9,204
Oceania	5,643	7,586	9,852	11,498	12,999	16,324	17,988	18,389	23,203	27,776	29,051	26,839	25,475	21,615	23,595	27,097	27,169	26,174
Australia	5,592	7,522	9,777	11,414	12,902	16,150	17,831	18,248	23,023	27,532	28,789	26,671	25,349	21,507	23,455	26,825	27,080	26,082
New Zealand	51	64	75	84	97	173	157	141	180	244	262	168	126	108	140	272	89	92

EU = European Union.

Note(s):

Value added is the amount contributed by a country, an industry, or other entity to the value of a good or service and excludes purchases of domestic and imported materials and inputs. Detail may not add to total because of rounding. The world total and regional totals do not include all countries and economies due to limitations in data availability. See [Table SKTI-4](#) for a full list of countries and economies in each region for which data are available. China includes Hong Kong. The EU total excludes the United Kingdom (UK) to reflect the new EU country composition following the UK's withdrawal on 1 February 2020. In order to maintain consistency over time, the EU aggregate excludes the UK for the entire time series.

Source(s):

U.S. Bureau of Economic Analysis, Value Added by Industry, accessed 5 October 2021; IHS Markit, special tabulations (2021) of the Comparative Industry Service.

Science and Engineering Indicators

Table SKTI-20

Exports and imports of KTI industries for select countries: 2002–18

(Millions of current dollars)

Region, country, or economy	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Exports																	
World	2,560.6	2,926.1	3,516.8	3,856.8	4,360.1	5,047.3	5,594.5	4,423.6	5,398.0	6,276.0	6,253.6	6,410.0	6,692.1	6,302.8	6,182.8	6,797.2	7,405.7
Austria	26.8	31.5	39.6	41.5	45.8	54.0	55.9	43.7	55.9	65.1	62.9	66.3	69.3	58.7	60.9	68.1	79.0
Belgium	42.4	50.6	59.4	60.2	61.7	70.1	79.6	62.1	65.3	75.9	72.0	75.6	73.8	60.6	68.5	80.5	88.0
Brazil	17.0	19.6	26.7	33.1	36.7	41.1	50.6	33.8	38.4	44.5	45.0	46.1	37.6	35.8	37.5	41.7	42.2
Canada	98.7	100.1	110.8	118.1	122.0	124.1	117.8	85.4	104.7	116.0	124.5	121.7	126.8	124.8	124.2	123.1	134.1
China	125.1	175.0	245.5	309.7	407.4	525.0	658.1	565.3	749.8	920.0	961.3	1,016.6	1,117.2	1,087.0	983.7	1,139.4	1,228.5
France	155.6	178.1	206.8	213.3	230.6	255.9	269.4	207.0	224.4	254.6	243.5	254.2	259.4	238.4	244.6	261.7	293.2
Germany	301.0	355.9	427.0	452.4	506.5	610.4	673.3	491.5	611.4	718.5	689.2	715.1	748.1	671.3	672.4	740.2	808.4
India	20.7	25.9	38.2	50.3	63.9	77.8	95.3	85.0	115.3	133.3	135.7	146.0	147.4	145.3	149.5	169.2	192.4
Indonesia	11.8	12.6	14.5	16.7	18.7	21.4	23.9	20.1	25.9	32.6	32.1	31.7	31.0	29.1	29.9	33.1	35.6
Ireland	56.0	58.2	67.8	68.3	72.0	84.1	95.9	93.7	94.8	107.1	101.8	108.6	125.4	165.4	162.5	177.9	208.3
Israel	15.9	18.3	22.1	24.3	24.9	26.5	32.6	28.3	32.4	37.8	38.7	38.9	38.7	37.4	36.6	38.6	41.7
Italy	102.7	121.2	142.5	149.3	166.8	203.2	224.0	165.7	176.5	204.6	187.8	198.4	205.8	184.1	187.5	203.4	220.0
Japan	275.6	312.8	373.6	390.1	411.6	452.8	488.8	339.4	465.5	495.0	491.5	441.4	455.2	414.3	426.3	461.3	502.4
Malaysia	41.6	44.8	54.1	59.7	60.0	70.5	72.8	64.2	76.0	87.1	83.5	80.1	83.8	76.7	73.9	84.7	92.6
Mexico	90.4	89.3	100.6	111.4	131.0	140.8	152.4	125.4	160.9	183.0	198.6	206.3	225.8	231.1	228.9	248.5	271.4
Netherlands	47.5	59.4	71.8	77.4	86.3	103.2	110.7	85.6	90.4	116.7	109.7	106.9	111.1	120.3	115.6	131.8	150.5
Philippines	12.6	13.4	15.5	16.2	18.2	20.7	21.3	20.8	26.4	25.7	29.6	29.9	32.4	32.9	33.3	37.0	39.6
Russia	17.3	20.6	25.4	30.0	36.3	40.4	53.9	33.2	42.3	51.9	59.2	57.6	56.5	40.7	28.5	36.8	44.6
Singapore	46.3	51.6	62.9	68.8	73.7	84.7	89.2	80.2	104.6	122.6	121.7	125.3	132.2	123.1	114.2	126.7	141.4
South Korea	107.2	132.1	174.0	197.6	222.4	257.6	281.5	251.2	328.1	399.4	399.2	419.9	418.9	391.4	371.9	416.2	446.9
Spain	58.8	73.3	86.2	87.5	92.9	112.4	112.7	91.2	104.9	124.4	109.3	121.4	123.4	112.2	117.3	126.3	136.7
Sweden	44.9	55.5	65.7	68.8	76.6	85.9	88.1	57.6	66.7	81.4	75.8	76.1	75.4	66.8	67.1	72.6	79.4
Switzerland	54.9	63.2	76.0	82.0	91.9	109.4	131.3	107.4	126.6	157.0	141.1	159.6	160.6	142.7	147.6	147.2	151.1
Taiwan	90.6	101.3	123.1	134.2	150.7	165.1	166.1	133.6	186.8	205.2	199.4	204.9	213.8	195.0	194.2	220.0	229.9
Thailand	30.7	36.9	45.6	51.2	61.9	70.9	82.0	69.8	86.0	102.1	106.9	107.6	107.0	98.3	101.7	111.2	119.0
United Kingdom	110.8	120.1	133.6	140.0	157.9	159.7	160.2	124.3	142.0	166.6	159.3	154.6	161.6	155.9	145.0	152.5	164.2
United States	356.1	361.2	403.9	446.7	502.7	554.3	579.4	464.3	532.4	580.8	615.3	618.7	643.2	628.8	611.3	624.2	659.9
Vietnam	2.0	2.6	3.4	4.4	5.7	7.2	10.5	10.5	13.5	18.0	22.4	26.4	31.0	33.7	37.2	44.6	50.8
Rest of the world	199.4	240.8	300.5	353.5	423.2	517.9	617.5	483.4	550.0	649.2	636.4	654.1	679.7	601.1	611.2	678.7	754.0
Imports																	
World	2,560.6	2,926.1	3,516.8	3,856.8	4,360.1	5,047.3	5,594.5	4,423.6	5,398.0	6,276.0	6,253.6	6,410.0	6,692.1	6,302.8	6,182.8	6,797.2	7,405.7
Austria	26.7	32.3	38.7	39.2	42.1	50.5	53.6	41.6	54.0	61.6	58.9	61.2	63.8	54.6	57.6	65.5	73.0
Belgium	39.3	47.1	58.6	60.5	61.2	72.3	74.4	57.0	60.5	68.8	60.9	63.7	66.1	55.3	66.7	73.6	83.1

Table SKTI-20

Exports and imports of KTI industries for select countries: 2002–18

(Millions of current dollars)

Region, country, or economy	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Brazil	28.0	27.8	36.4	42.4	51.0	65.8	101.8	73.3	104.1	126.4	127.4	134.2	125.2	98.6	83.4	93.5	104.9
Canada	93.4	101.4	115.4	132.1	146.7	158.6	174.9	136.0	165.1	182.7	191.7	194.1	195.9	182.7	175.8	192.9	206.2
China	156.8	212.6	279.7	302.9	361.1	425.0	503.0	434.7	583.8	724.9	697.9	777.2	852.0	776.2	721.2	843.4	921.9
France	130.8	153.7	179.0	191.8	205.9	241.0	251.6	198.4	216.4	254.2	231.5	238.5	247.2	227.1	235.8	259.3	284.7
Germany	160.4	193.9	231.6	245.7	284.9	320.6	349.0	275.6	345.1	391.4	354.4	360.1	379.7	348.4	359.7	400.3	455.4
India	24.2	30.5	45.0	57.3	70.1	95.4	111.9	95.4	120.0	157.8	151.9	132.6	140.7	145.3	147.4	167.8	191.3
Indonesia	16.3	16.5	23.1	26.4	29.8	35.1	54.1	46.8	62.9	76.6	83.9	75.8	71.4	61.8	59.0	63.9	79.4
Ireland	17.9	19.6	23.0	25.6	29.3	35.0	35.8	30.4	31.3	33.3	40.9	40.8	50.9	49.5	59.7	67.2	76.0
Israel	11.0	11.8	13.8	14.8	15.4	18.4	19.7	14.5	17.7	22.5	22.8	22.3	23.2	20.8	23.1	24.4	28.0
Italy	103.1	123.5	143.3	148.4	162.2	188.6	194.2	151.7	176.8	192.2	155.5	151.4	156.4	148.4	152.9	170.3	192.2
Japan	99.6	113.4	134.0	127.1	158.9	165.1	185.2	145.1	187.8	226.9	240.4	233.1	258.8	239.0	238.7	252.9	274.0
Malaysia	37.3	37.9	45.8	48.7	51.0	59.5	68.6	53.0	68.3	75.9	78.2	78.2	77.8	64.2	61.5	70.1	75.8
Mexico	83.6	84.5	97.4	109.5	125.8	139.1	149.1	113.8	148.4	173.1	182.4	188.0	198.4	196.3	191.7	208.5	230.1
Netherlands	33.3	43.7	48.5	50.4	56.6	70.4	75.0	57.9	62.5	73.8	66.7	68.7	70.4	88.2	88.1	96.8	108.0
Philippines	14.7	15.6	17.7	18.7	20.4	22.2	21.1	21.1	27.8	25.5	30.1	30.9	32.2	39.4	47.0	51.4	58.8
Russia	28.1	35.0	45.2	58.0	74.8	101.7	134.5	89.1	118.2	152.4	166.7	163.2	148.0	94.3	96.7	131.5	136.5
Singapore	22.5	19.3	26.8	24.4	29.1	37.9	43.4	32.8	41.4	50.0	48.3	46.9	53.3	57.3	59.8	69.5	76.0
South Korea	48.9	58.0	72.6	84.3	101.5	117.6	137.5	102.2	137.9	175.0	168.2	165.1	167.9	164.2	163.1	193.2	196.9
Spain	73.7	93.3	116.3	123.0	133.9	163.1	159.5	110.8	119.5	128.5	109.6	113.5	124.9	119.7	121.4	133.3	148.6
Sweden	31.3	37.9	44.3	47.4	52.7	60.9	60.6	41.0	47.5	58.8	54.7	55.2	58.2	56.9	58.2	64.0	70.1
Switzerland	39.5	45.5	50.7	58.6	61.4	68.4	82.9	69.7	75.5	91.0	84.8	97.0	89.7	89.9	94.6	93.9	94.9
Taiwan	58.2	65.8	86.6	91.4	100.6	108.2	118.5	84.0	122.8	137.8	131.7	129.8	133.0	109.3	106.1	116.8	122.6
Thailand	26.7	31.0	38.6	47.1	48.9	51.4	64.1	47.2	65.9	84.5	93.6	95.2	90.0	81.3	75.3	85.4	97.8
United Kingdom	144.2	154.7	179.4	187.9	207.2	222.5	209.6	159.4	188.6	196.1	191.1	197.2	221.4	212.7	202.5	202.7	211.2
United States	563.2	579.5	649.6	718.6	782.4	817.3	813.9	643.8	790.4	882.4	942.3	957.0	1024.0	1079.5	1065.9	1131.8	1210.2
Vietnam	6.9	8.5	10.7	12.4	14.6	20.7	26.9	24.8	29.1	32.6	32.0	37.8	44.3	50.2	53.8	65.3	72.6
Rest of the world	441.0	531.7	665.0	762.3	880.5	1115.0	1320.1	1072.4	1228.8	1419.3	1455.3	1501.3	1527.3	1391.9	1316.2	1408.1	1525.5

EU = European Union; KTI = knowledge and technology intensive; nec = not elsewhere classified.

Note(s):

Data are available for the following KTI industries: chemicals and chemical products; pharmaceuticals; computer, electronic, and optical products; electrical equipment; machinery and equipment nec; motor vehicles, trailers, and semi-trailers; other transport equipment; and information technology and other information services. China includes Hong Kong.

Source(s):

Organisation for Economic Co-operation and Development, Trade in Value Added Principal Indicators (2021 edition), accessed 27 November 2021.

Table SKTI-21

Total AI venture capital raised, by selected country and region: 2000–20

(Millions of dollars)

Country or region	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Total	311	362	108	146	196	252	403	323	777	532	726	1,779	1,760	3,251	9,844	12,664	22,117	26,972	46,015	38,151	54,194
North America	272	320	89	126	160	192	191	221	654	497	610	1,412	1,347	2,674	8,319	8,908	14,873	10,249	20,074	22,443	28,492
United States	272	310	89	125	160	190	180	197	614	484	598	1,374	1,292	2,595	8,240	8,701	14,525	9,745	19,110	21,288	27,599
Canada	NA	10	NA	1	NA	2	11	24	40	14	12	38	55	78	77	202	310	492	955	1,147	877
Asia	2	20	1	12	9	3	148	6	31	13	55	226	117	188	1,007	2,764	5,709	14,050	21,873	9,901	18,884
China	2	7	1	12	2	3	134	1	19	5	47	187	44	109	869	2,358	5,323	13,393	20,527	7,689	16,923
Japan	NA	NA	1	NA	NA	NA	NA	1	7	2	0	8	7	26	34	81	165	255	360	793	457
India	NA	6	NA	NA	7	0	10	NA	2	5	7	15	13	3	28	62	99	64	227	439	427
Europe	36	21	14	2	27	46	41	90	60	22	55	101	236	287	398	715	1,112	1,941	2,925	4,264	4,900
Central America	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1	0	NA	0	3
South America	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0	1	0	0	1	4	113	54	110	146
Africa	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0	NA	NA	0	2	13	6	80	192	58
Middle East	0	1	2	3	NA	4	23	7	32	1	2	34	57	101	114	264	380	577	920	1,118	1,545
Oceania	NA	NA	2	3	NA	6	NA	NA	NA	NA	4	6	2	1	5	10	27	36	90	123	166

NA = not available.

AI = artificial intelligence.

Note(s):

Countries receiving venture capital in AI are determined by the headquarters location of firms receiving venture capital financing.

Source(s):

PitchBook, venture capital and private equity database, accessed 27 September 2021.

Science and Engineering Indicators

Table SKTI-22

AI-related venture capital funding, by U.S. state and region: 2010–20

(Millions of dollars)

Region	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Midwest	5.62	12.37	18.92	83.74	348.58	514.79	107.46	570.56	563.02	653.60	1,512.80
Illinois	NA	11.15	1.23	42.26	317.74	396.56	38.52	385.85	257.64	269.73	674.05
Indiana	NA	NA	NA	NA	1.63	2.55	13.54	10.92	36.13	22.23	40.27
Iowa	1.37	NA	NA	1.25	NA	0.02	5.15	2.36	33.10	3.55	30.41
Kansas	NA	NA	NA	NA	0.95	7.56	1.78	53.06	0.84	21.00	2.40
Michigan	NA	NA	NA	NA	3.99	0.28	1.65	35.48	52.01	167.85	16.80
Minnesota	NA	1.12	11.39	25.14	8.08	3.10	2.28	28.91	76.49	49.04	267.76
Missouri	NA	NA	1.40	2.71	7.54	1.66	6.67	7.90	45.25	28.99	34.34
Nebraska	1.50	NA	1.20	NA	0.74	72.94	NA	30.10	0.01	0.95	1.33
North Dakota	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ohio	0.25	NA	3.70	10.00	4.21	27.01	27.00	8.36	48.11	64.43	423.35
South Dakota	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Wisconsin	2.50	0.10	NA	2.38	3.70	3.11	10.87	7.62	13.44	25.83	22.09
Northeast	100.50	255.97	214.33	483.48	733.73	1,162.97	1,941.26	2,320.76	4,388.45	5,271.26	5,928.71
Connecticut	NA	0.50	0.59	10.05	0.95	8.68	20.63	87.64	53.47	72.03	66.09
Maine	NA	NA	NA	NA	NA	NA	NA	NA	NA	3.60	0.25
Massachusetts	40.29	56.52	87.34	182.77	190.58	383.25	686.73	884.13	1,519.20	1,481.11	2,728.12
New Hampshire	1.02	NA	1.62	1.71	NA	0.01	3.85	0.03	2.73	1.91	1.69
New Jersey	NA	84.32	28.19	38.74	38.50	2.47	27.80	14.92	58.87	40.96	134.26
New York	40.57	111.56	80.06	205.39	478.50	734.45	1,060.34	1,190.19	2,637.90	2,543.01	2,805.82
Pennsylvania	18.62	3.07	16.53	44.82	23.32	34.11	141.90	141.37	114.17	1,128.29	190.51
Rhode Island	NA	NA	NA	NA	NA	NA	0.01	NA	0.11	NA	NA
Vermont	NA	NA	NA	NA	1.88	NA	NA	2.48	2.00	0.35	1.97
South	131.27	175.55	101.15	235.59	479.54	353.33	452.97	715.72	1,025.10	2,237.87	1,698.39
Alabama	NA	NA	NA	NA	NA	NA	0.17	0.30	1.26	2.40	4.90
Arkansas	NA	NA	NA	1.30	NA	0.30	0.54	2.28	0.21	16.92	NA
Delaware	NA	NA	0.08	9.00	0.02	0.90	4.77	4.55	28.95	9.37	27.25
District of Columbia	NA	NA	1.01	2.33	8.20	29.60	12.20	34.69	19.11	60.39	215.30
Florida	10.00	NA	6.79	2.12	22.91	8.02	51.75	46.63	182.38	248.96	237.60
Georgia	23.92	34.37	24.73	49.60	89.20	8.70	11.59	45.17	69.36	547.68	122.63
Kentucky	NA	NA	0.10	1.01	0.33	1.18	5.66	1.08	69.58	114.97	7.21
Louisiana	NA	0.50	NA	NA	NA	3.86	NA	NA	1.15	14.90	NA
Maryland	11.33	0.22	1.05	2.85	44.94	13.10	12.75	25.95	65.93	56.02	57.34
Mississippi	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
North Carolina	6.38	21.67	3.42	12.13	26.90	35.95	35.67	21.73	146.60	190.40	52.83

Table SKTI-22

AI-related venture capital funding, by U.S. state and region: 2010–20

(Millions of dollars)

Region	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Oklahoma	NA	NA	NA	NA	1.40	10.00	0.05	1.85	NA	NA	1.00
South Carolina	NA	NA	NA	0.28	0.14	0.22	5.42	6.03	14.01	14.10	NA
Tennessee	4.50	5.71	5.07	10.86	26.30	8.37	42.63	7.32	30.53	78.36	55.55
Texas	20.04	59.86	33.80	23.93	98.91	172.58	164.77	423.81	280.57	718.19	790.08
Virginia	55.10	53.22	25.10	120.18	160.29	60.55	105.00	94.33	115.46	165.21	126.70
West Virginia	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
West	360.74	930.11	957.58	1,792.05	6,678.18	6,669.44	12,023.68	6,137.93	13,133.65	13,125.04	18,459.48
Alaska	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	2.37
Arizona	NA	NA	0.02	20.67	NA	37.75	7.62	9.64	67.69	22.74	85.72
California	245.40	636.40	762.27	1,446.74	5,358.44	6,335.31	10,797.20	5,499.49	12,299.95	11,645.28	16,719.53
Colorado	90.00	268.75	178.53	268.96	1,207.05	146.87	959.23	102.71	139.88	155.49	701.91
Hawaii	NA	NA	NA	NA	NA	NA	0.08	NA	NA	54.61	NA
Idaho	NA	NA	0.40	NA	NA	NA	0.01	0.30	NA	NA	0.91
Montana	NA	NA	NA	NA	NA	NA	3.50	22.00	0.10	NA	0.08
Nevada	NA	NA	NA	0.04	NA	2.54	5.71	2.02	86.50	202.05	41.50
New Mexico	NA	4.60	NA	0.43	0.08	9.49	0.02	31.52	8.64	20.20	20.50
Oregon	NA	5.26	8.81	8.23	11.69	8.70	48.58	23.55	82.61	63.00	37.22
Utah	3.00	NA	1.25	0.11	3.87	25.22	43.25	135.41	144.33	299.74	292.90
Washington	22.34	15.10	6.30	46.87	97.05	103.56	158.48	311.29	293.74	661.62	556.34
Wyoming	NA	NA	NA	NA	NA	NA	NA	NA	10.21	0.31	0.50
United States	598.13	1,374.00	1,291.98	2,594.86	8,240.13	8,700.53	14,525.38	9,745.15	19,110.42	21,287.96	27,599.43

NA = not available.

AI = artificial intelligence.

Note(s):

Data not available for all states for all years. States are grouped into regions according to the groupings of the Geography Division of the U.S. Census Bureau.

Source(s):

PitchBook, venture capital and private equity database, accessed 27 September 2021.

Science and Engineering Indicators

Table SKTI-23

Unique AI-related job postings as a share of all unique job postings, by state: October 2016–September 2021

(Number and percent)

State	Total unique AI-related job postings	Total unique job postings	Percent of all unique job postings that are AI-related
Alabama	24,531	2,770,968	0.89
Alaska	6,018	475,521	1.27
Arizona	63,577	3,343,964	1.90
Arkansas	19,008	2,059,626	0.92
California	685,998	17,827,088	3.85
Colorado	91,198	4,069,643	2.24
Connecticut	44,109	2,149,345	2.05
Delaware	16,694	718,979	2.32
District of Columbia	64,115	1,390,626	4.61
Florida	116,986	8,625,104	1.36
Georgia	96,084	5,697,887	1.69
Hawaii	5,388	454,259	1.19
Idaho	11,579	987,540	1.17
Illinois	164,296	8,384,859	1.96
Indiana	31,966	4,246,109	0.75
Iowa	26,723	2,717,540	0.98
Kansas	24,270	2,213,575	1.10
Kentucky	19,664	2,755,659	0.71
Louisiana	15,071	2,246,998	0.67
Maine	8,434	931,436	0.91
Maryland	97,644	4,026,884	2.42
Massachusetts	169,238	5,115,881	3.31
Michigan	69,008	5,347,399	1.29
Minnesota	68,688	4,163,393	1.65
Mississippi	8,083	1,527,234	0.53
Missouri	53,496	4,264,348	1.25
Montana	6,880	709,650	0.97
Nebraska	14,643	1,456,123	1.01
Nevada	17,353	1,397,034	1.24
New Hampshire	15,154	1,087,345	1.39
New Jersey	122,873	5,041,387	2.44
New Mexico	15,147	1,105,194	1.37
New York	309,182	9,864,638	3.13
North Carolina	106,490	5,737,720	1.86
North Dakota	7,156	634,223	1.13

Table SKTI-23

Unique AI-related job postings as a share of all unique job postings, by state: October 2016–September 2021

(Number and percent)

State	Total unique AI-related job postings	Total unique job postings	Percent of all unique job postings that are AI-related
Ohio	87,520	7,458,853	1.17
Oklahoma	14,220	2,210,086	0.64
Oregon	45,371	2,445,498	1.86
Pennsylvania	126,313	8,794,619	1.44
Rhode Island	16,355	760,158	2.15
South Carolina	21,601	2,758,078	0.78
South Dakota	6,561	632,103	1.04
Tennessee	41,137	3,962,863	1.04
Texas	268,357	13,657,677	1.96
Utah	35,218	1,954,017	1.80
Vermont	8,834	597,382	1.48
Virginia	189,320	6,497,229	2.91
Washington	186,966	4,641,732	4.03
West Virginia	8,534	1,433,391	0.60
Wisconsin	36,408	3,882,506	0.94
Wyoming	4,574	461,915	0.99
Total	3,714,033	187,693,286	1.98

AI = artificial intelligence.

Source(s):

Emsi Burning Glass, Job Posting Analytics, accessed 15 October 2021.

Science and Engineering Indicators

Table SKTI-24

Total biotechnology venture capital raised, by selected country and region: 2000–20

(Millions of dollars)

Country or region	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Total	1,642.77	1,631.77	1,835.81	1,691.99	2,932.42	2,218.45	3,123.91	4,347.49	3,857.17	3,765.81	4,513.17	4,149.37	5,924.00	7,106.06	9,888.77	13,639.96	13,483.33	17,149.00	26,498.91	24,390.90	44,036.83
North America	1,205.59	1,188.58	1,388.75	1,314.32	2,064.00	1,469.37	2,242.36	3,125.05	2,576.74	2,834.38	3,111.33	2,987.04	3,853.92	5,188.51	6,937.83	9,443.50	9,452.89	13,112.36	18,633.84	16,849.54	27,811.96
United States	1,185.87	1,176.80	1,372.01	1,296.26	2,033.60	1,444.02	2,196.63	3,051.26	2,508.48	2,816.07	3,097.86	2,889.46	3,797.13	5,124.56	6,853.33	9,134.88	9,290.27	12,806.30	18,179.73	16,260.60	27,359.72
Canada	19.72	11.78	16.74	18.06	30.40	25.35	45.73	73.79	68.16	18.31	13.47	97.58	56.79	63.95	84.04	307.92	162.62	305.86	253.96	588.80	438.85
Asia	0.60	6.00	18.85	15.95	6.90	18.89	101.79	121.95	160.59	76.27	172.95	203.74	542.55	320.33	510.32	1,220.35	1,820.05	1,659.49	3,432.14	3,317.16	9,351.44
China	0.6	6	7.43	NA	NA	2.42	78	21.4	50.9	31.65	158.78	164.64	493.09	188.76	256.99	939.69	1,487.46	1,247.97	2,652.20	2,642.19	8,314.17
Japan	NA	NA	11.42	13	0.9	9.9	10.4	10.7	42.48	8	14.16	24.02	33.87	56.46	30.93	92.5	63.13	117.58	158.07	107.26	187.96
India	NA	NA	NA	2.13	NA	0.87	5.89	37.5	28.71	16	0.01	NA	6.05	8.34	0.04	43.58	5.1	54.26	12.5	34.69	10.85
Europe	416.73	391.74	393.35	345.92	791.95	607.45	738.18	1,044.38	1,083.45	836.48	1,121.54	916.16	1,325.76	1,527.82	2,313.64	2,827.84	2,012.03	2,096.57	4,085.33	3,971.68	6,402.29
Central America	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	5.02	0.8	4.12	0.1	NA	2.6	NA	NA
South America	0.35	NA	NA	NA	NA	NA	NA	NA	1.82	1.37	1.87	6.5	128.57	3.93	8.17	33.82	3.42	14.42	18.53	2.25	1.35
Africa	NA	NA	NA	NA	NA	NA	8.63	NA	NA	0.4	NA	NA	NA	0.01	NA	1.47	3.1	0.1	NA	4.66	16.61
Middle East	8.59	14.68	24.3	14.3	68.1	12.68	27	29.75	10.2	8.5	84.62	25.95	69.09	28.27	105.06	67.92	148.93	247.23	235.93	155.56	351.42
Oceania	10.91	30.77	10.56	1.5	1.47	110.06	5.95	26.36	24.37	8.41	20.86	9.98	4.11	32.17	12.95	40.94	42.81	18.83	90.54	90.05	101.76

NA = not available.

Note(s):

Countries receiving venture capital in biotechnology are determined by the headquarters location of firms receiving venture capital financing.

Source(s):

PitchBook, venture capital and private equity database, accessed 27 September 2021.

Science and Engineering Indicators

Table SKTI-25

Biotechnology-related venture capital funding, by U.S. state and region: 2010–20

(Millions of dollars)

Region	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Midwest	122.85	122.15	151.21	136.72	220.77	362.47	218.33	398.76	555.32	630.32	541.48
Illinois	NA	54.39	9.98	16.23	25.75	143.87	67.90	119.25	10.42	220.85	12.39
Indiana	28.10	1.03	0.31	5.98	4.01	4.93	12.49	20.22	23.98	58.00	79.38
Iowa	2.49	0.45	2.59	NA	25.47	0.16	1.23	0.01	0.64	2.30	0.88
Kansas	3.36	5.39	6.68	NA	0.73	4.02	NA	9.57	15.96	0.01	0.05
Michigan	20.56	7.68	60.40	24.99	37.64	91.25	52.71	31.93	85.57	48.61	99.15
Minnesota	2.10	18.35	12.31	0.04	11.53	7.35	11.98	78.35	68.21	56.63	42.54
Missouri	0.83	0.82	9.13	23.94	34.49	15.03	16.32	62.01	14.20	84.20	129.75
Nebraska	NA	NA	NA	NA	6.65	4.32	0.01	3.54	5.49	4.60	21.47
North Dakota	NA	NA	NA	0.15	NA	NA	NA	NA	1.63	NA	NA
Ohio	12.07	2.30	37.36	58.60	46.33	25.19	31.69	48.63	226.11	95.56	102.41
South Dakota	NA	NA	NA	NA	6.62	NA	4.18	NA	22.00	NA	14.00
Wisconsin	53.34	31.74	12.45	6.79	21.55	66.35	19.82	25.25	81.11	59.56	39.46
Northeast	1,183.80	1,021.78	1,535.38	1,422.91	2,014.16	3,177.42	3,673.92	5,522.47	7,099.16	6,238.62	10,734.39
Connecticut	12.82	4.15	11.90	32.44	22.31	63.36	66.73	343.55	159.12	232.18	444.64
Maine	0.03	NA	2.12	NA	0.63	NA	0.31	3.77	NA	1.08	NA
Massachusetts	847.04	860.22	966.01	971.68	1,309.64	2,420.96	2,964.77	4,347.89	4,918.24	4,339.65	8,016.04
New Hampshire	4.80	5.19	20.08	1.74	2.62	112.19	4.00	17.70	NA	NA	NA
New Jersey	55.79	48.42	246.63	93.57	211.32	175.70	155.38	194.93	462.32	286.95	254.33
New York	94.46	65.09	90.72	126.41	213.89	204.84	229.58	308.09	571.31	636.69	1,359.53
Pennsylvania	141.53	20.58	139.26	158.66	228.20	182.57	251.80	296.42	987.85	738.08	659.85
Rhode Island	27.33	12.08	58.61	38.40	25.50	NA	1.35	10.12	0.32	3.99	NA
Vermont	NA	6.05	0.05	0.01	0.05	17.80	NA	NA	NA	NA	NA
South	281.32	623.51	405.69	547.71	561.30	1,137.23	1,016.23	633.57	1,649.50	1,824.14	1,898.83
Alabama	5.17	2.35	1.25	0.90	0.02	6.16	2.92	0.01	0.10	2.76	1.92
Arkansas	NA	0.17	4.41	1.70	3.50	0.18	NA	1.50	6.44	2.23	NA
Delaware	NA	0.13	NA	2.15	NA	8.10	14.27	10.29	70.69	89.35	100.54
District of Columbia	1.20	0.50	NA	NA	NA	NA	38.95	NA	0.08	23.91	23.25
Florida	13.44	13.95	42.17	27.17	41.93	120.26	185.51	98.12	41.26	383.60	36.87
Georgia	0.10	0.50	4.60	9.50	22.06	78.58	4.84	84.72	49.57	36.35	21.56
Kentucky	17.96	9.47	0.45	3.20	3.84	1.35	1.21	7.55	66.14	208.16	115.00
Louisiana	0.24	3.11	1.50	1.80	0.38	0.83	0.17	3.82	2.78	1.20	5.50
Maryland	107.24	116.46	112.41	245.99	136.26	276.39	195.61	175.26	687.17	290.61	360.18
Mississippi	71.60	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
North Carolina	32.38	58.49	116.94	123.18	142.05	435.32	329.66	76.60	447.64	494.90	381.19

Table SKTI-25

Biotechnology-related venture capital funding, by U.S. state and region: 2010–20

(Millions of dollars)

Region	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Oklahoma	4.94	7.55	35.64	1.61	17.15	61.33	2.91	0.80	50.08	0.60	NA
South Carolina	3.44	0.40	12.29	4.44	NA	8.13	6.99	4.05	31.21	27.68	4.12
Tennessee	NA	6.02	7.02	10.01	19.02	4.84	2.34	13.13	5.33	2.38	15.51
Texas	21.65	403.91	52.86	91.29	153.42	130.51	224.22	109.60	157.40	130.80	639.29
Virginia	1.96	0.50	14.15	24.77	21.67	5.11	6.63	48.12	33.61	129.61	193.90
West Virginia	NA	NA	NA	NA	NA	0.14	NA	NA	NA	NA	NA
West	1,509.42	1,122.02	1,693.45	3,017.22	4,057.10	4,457.76	4,381.79	6,251.50	8,875.75	7,567.35	14,184.22
Alaska	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Arizona	0.05	2.00	30.95	8.55	7.49	31.69	2.67	9.68	2.67	81.66	15.98
California	1,371.31	988.95	1,462.62	1,780.09	3,431.83	3,957.62	4,088.22	5,825.60	8,388.84	6,288.30	12,377.24
Colorado	55.14	52.96	38.29	16.97	80.32	81.94	58.78	7.64	96.46	211.17	252.98
Hawaii	0.10	0.91	15.00	0.50	1.51	NA	NA	NA	NA	1.18	NA
Idaho	NA	NA	NA	NA	NA	NA	0.68	0.21	NA	0.03	NA
Montana	0.08	3.54	NA	0.72	1.63	1.42	NA	16.32	0.77	10.58	28.50
Nevada	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
New Mexico	2.18	0.10	0.13	13.56	2.08	9.20	0.29	15.13	2.83	12.50	6.00
Oregon	15.90	0.31	17.02	1,009.41	22.58	4.67	7.05	13.09	11.30	29.83	18.21
Utah	1.59	5.52	19.58	6.56	48.84	72.84	30.31	139.47	23.41	160.33	413.98
Washington	63.07	67.73	109.86	180.86	460.82	298.38	193.79	213.96	349.47	771.77	1,071.05
Wyoming	NA	NA	NA	NA	NA	NA	NA	10.40	NA	NA	0.28
United States	3,097.86	2,889.46	3,797.13	5,124.56	6,853.33	9,134.88	9,290.27	12,806.30	18,179.73	16,260.60	27,359.72

NA = not available.

Note(s):

Data not available for all states for all years. States are grouped into regions according to the groupings of the Geography Division of the U.S. Census Bureau.

Source(s):

PitchBook, venture capital and private equity database, accessed 27 September 2021.

Science and Engineering Indicators

Table SKTI-26

Unique biotechnology-related job postings as a share of all unique job postings, by state: October 2016–September 2021

(Number and percent)

State	Total unique biotechnology-related job postings	Total unique job postings	Percent of all unique job postings that are biotechnology-related
Alabama	27,651	2,798,383	0.99
Alaska	7,162	479,534	1.49
Arizona	61,738	3,372,203	1.83
Arkansas	18,289	2,078,853	0.88
California	536,754	17,978,379	2.99
Colorado	61,119	4,102,477	1.49
Connecticut	48,470	2,169,828	2.23
Delaware	18,309	725,949	2.52
District of Columbia	36,076	1,400,820	2.58
Florida	143,494	8,693,059	1.65
Georgia	77,074	5,740,701	1.34
Hawaii	5,385	458,217	1.18
Idaho	13,218	995,887	1.33
Illinois	173,694	8,457,458	2.05
Indiana	59,472	4,283,946	1.39
Iowa	25,201	2,742,263	0.92
Kansas	33,238	2,236,655	1.49
Kentucky	30,230	2,780,187	1.09
Louisiana	27,560	2,264,732	1.22
Maine	14,996	943,134	1.59
Maryland	101,762	4,063,628	2.50
Massachusetts	282,874	5,156,856	5.49
Michigan	76,167	5,387,184	1.41
Minnesota	92,690	4,200,824	2.21
Mississippi	13,117	1,539,680	0.85
Missouri	63,076	4,296,263	1.47
Montana	9,205	715,459	1.29
Nebraska	20,693	1,472,595	1.41
Nevada	19,926	1,407,690	1.42
New Hampshire	19,617	1,096,306	1.79
New Jersey	228,537	5,083,581	4.50
New Mexico	16,191	1,114,689	1.45
New York	237,142	9,930,733	2.39
North Carolina	143,278	5,780,859	2.48
North Dakota	8,315	639,324	1.30

Table SKTI-26

Unique biotechnology-related job postings as a share of all unique job postings, by state: October 2016–September 2021

(Number and percent)

State	Total unique biotechnology-related job postings	Total unique job postings	Percent of all unique job postings that are biotechnology-related
Ohio	105,504	7,518,800	1.40
Oklahoma	22,007	2,229,226	0.99
Oregon	42,624	2,467,607	1.73
Pennsylvania	215,684	8,861,297	2.43
Rhode Island	16,451	765,814	2.15
South Carolina	32,835	2,779,816	1.18
South Dakota	8,730	638,210	1.37
Tennessee	56,330	3,992,903	1.41
Texas	200,928	13,774,605	1.46
Utah	31,945	1,969,506	1.62
Vermont	8,609	602,576	1.43
Virginia	78,623	6,556,586	1.20
Washington	87,507	4,679,053	1.87
West Virginia	15,992	1,444,318	1.11
Wisconsin	56,800	3,910,343	1.45
Wyoming	5,947	466,777	1.27
Total	3,738,236	189,245,773	1.98

Source(s):

Emsi Burning Glass, Job Posting Analytics, accessed 15 October 2021.

Science and Engineering Indicators