



NATIONAL SCIENCE BOARD SCIENCE & ENGINEERING INDICATORS 2020



Industry Activities

Production and Trade of Knowledge- and Technology-Intensive Industries

Supplemental Tables

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TABLE S6-1

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	Kenya	India	
	Chile	Bulgaria	Jordan	Morocco	Indonesia	
	Colombia	Czechia	Kuwait	Nigeria	Japan	
	Costa Rica	Denmark	Qatar	Senegal	Malaysia	
	Ecuador	Finland	Saudi Arabia	South Africa	Pakistan	
	Honduras	France	United Arab Emirates	Tunisia	Philippines	
	Jamaica	Germany		Zimbabwe	Singapore	
	Panama	Greece			South Korea	
	Peru	Hungary			Sri Lanka	
	Uruguay	Ireland			Taiwan	
	Venezuela	Italy			Thailand	
		Netherlands			Vietnam	
		Poland				
		Portugal				
		Romania				
		Slovakia				
		Spain				
		Sweden				
		United Kingdom				
		Other Europe				
		Norway				
		Russia				
		Switzerland				
		Turkey				
		Ukraine				

EU = European Union.

Source(s):

IHS Markit, Comparative Industry Service.

Science and Engineering Indicators

TABLE S6-2

Value added of KTI industries, by region, country, or economy: 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
World	3,473,038	3,876,320	4,305,668	4,574,271	4,914,716	5,532,705	6,003,764	5,547,411	6,304,366	7,008,185	7,132,077	7,376,083	7,679,857	7,545,253	7,779,187	8,277,119	9,020,711
North America	1,254,043	1,299,313	1,355,778	1,432,797	1,510,226	1,588,799	1,623,166	1,541,442	1,694,155	1,792,135	1,849,794	1,938,018	2,005,464	2,106,428	2,183,120	2,303,069	2,496,522
Canada	63,411	70,942	76,367	82,334	88,910	96,208	93,115	82,539	96,882	108,489	111,951	111,026	108,743	99,146	91,423	96,488	101,165
Mexico	61,453	54,766	56,498	60,888	70,137	72,937	74,264	55,445	69,532	75,706	85,171	88,705	92,889	93,737	87,886	93,960	98,039
United States	1,129,179	1,173,605	1,222,914	1,289,576	1,351,179	1,419,654	1,455,788	1,403,458	1,527,741	1,607,940	1,652,672	1,738,287	1,803,832	1,913,546	2,003,810	2,112,621	2,296,415
Central and South America	69,827	74,516	93,314	114,270	136,365	173,785	216,214	199,674	249,154	286,511	271,234	274,101	251,025	208,757	183,891	210,532	205,408
Argentina	6,370	7,986	10,193	12,632	15,264	19,395	24,925	24,107	28,446	32,266	32,800	32,981	25,371	26,486	24,090	28,026	23,196
Bolivia	244	246	250	262	274	296	387	450	467	511	560	616	653	706	788	837	918
Brazil	42,622	46,352	59,229	72,959	88,556	115,136	144,111	125,200	169,579	196,023	172,426	172,654	159,316	110,845	106,952	122,683	118,280
Chile	3,325	3,452	4,446	5,851	6,542	7,554	8,389	8,937	11,016	12,884	14,032	15,305	15,085	14,376	14,076	14,962	16,249
Colombia	5,575	5,427	6,651	8,035	9,041	11,438	12,978	12,601	15,182	16,682	18,252	18,656	18,765	15,172	14,843	16,004	16,996
Costa Rica	1,109	1,103	1,239	1,401	1,599	1,856	2,057	1,933	2,368	2,709	2,992	3,163	3,294	3,610	3,796	3,964	4,114
Ecuador	1,509	1,448	1,403	1,570	1,657	2,109	2,313	2,554	2,842	2,668	3,479	3,517	3,556	3,460	3,377	3,380	3,544
Honduras	634	655	653	758	877	953	1,049	993	1,126	1,324	1,473	1,462	1,482	1,468	1,544	1,632	1,718
Jamaica	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Panama	525	555	600	631	697	748	845	959	1,064	1,169	1,315	1,496	1,569	1,687	1,786	1,930	2,105
Peru	2,373	2,465	2,641	2,954	3,375	3,916	4,870	4,890	5,849	6,610	7,554	8,248	8,050	7,559	7,254	8,066	8,555
Uruguay	725	599	643	784	882	1,037	1,461	1,495	2,038	2,350	2,659	2,973	3,060	2,933	2,980	3,281	3,353
Venezuela	4,815	4,230	5,365	6,434	7,601	9,348	12,829	15,555	9,178	11,316	13,692	13,029	10,825	20,455	2,404	5,768	6,381
Europe	1,032,579	1,232,417	1,417,410	1,476,273	1,598,100	1,868,360	2,025,980	1,685,465	1,801,125	2,026,456	1,924,579	2,033,394	2,112,199	1,906,200	1,940,043	2,015,830	2,200,526
EU	943,573	1,127,714	1,289,138	1,327,439	1,426,637	1,654,433	1,761,808	1,481,105	1,564,190	1,735,860	1,632,183	1,724,630	1,821,494	1,675,714	1,706,800	1,757,783	1,928,566
Austria	18,720	22,859	25,982	28,283	30,949	36,398	40,160	35,390	34,689	40,343	38,725	41,487	42,656	36,762	38,111	39,096	43,547
Belgium	25,227	29,699	32,967	34,747	35,498	40,351	43,475	38,411	40,208	43,224	40,980	43,058	44,825	38,246	39,962	42,197	48,098
Bulgaria	600	793	1,020	1,217	1,393	1,954	2,065	2,010	2,336	2,923	2,684	2,885	3,127	3,078	3,384	3,818	4,332
Czechia	8,615	10,356	13,206	15,895	19,203	24,496	29,112	24,546	26,725	31,192	29,200	29,572	32,152	29,213	31,121	34,246	37,910
Denmark	15,537	18,377	20,536	20,527	22,744	26,265	30,667	28,649	29,676	31,194	30,283	33,687	34,885	33,495	36,002	36,047	39,550
Finland	18,418	22,501	25,828	27,295	29,432	36,188	39,661	30,118	29,551	31,258	25,783	28,472	29,900	25,782	26,119	27,319	29,920
France	139,906	165,821	184,906	186,877	196,612	222,328	239,576	215,523	211,079	225,957	214,084	226,372	232,954	203,165	210,077	219,467	237,213
Germany	288,638	351,621	400,386	408,897	441,394	521,351	551,564	450,368	506,328	582,885	550,133	583,970	625,664	547,109	561,461	577,730	631,688
Greece	3,926	5,211	6,209	6,490	7,083	7,786	7,732	7,092	6,887	6,034	5,775	6,099	5,946	5,167	5,107	5,246	5,978
Hungary	6,711	9,121	11,440	13,109	14,126	16,884	18,272	14,783	16,227	18,178	16,533	18,187	19,687	18,524	18,272	19,593	20,958
Ireland	29,011	30,698	33,379	34,393	34,874	41,168	43,003	44,778	42,872	48,469	45,881	47,016	52,418	93,424	95,598	95,278	111,610
Italy	103,430	123,980	140,505	141,875	150,609	174,152	185,796	159,229	163,233	173,562	157,509	163,832	168,010	146,323	150,011	153,172	165,572
Netherlands	36,233	43,506	50,919	53,477	58,673	69,514	74,362	61,795	63,496	69,200	62,376	63,359	64,876	59,201	61,056	64,412	71,497
Poland	10,907	13,291	15,987	19,056	21,841	27,161	34,566	29,733	30,862	35,197	34,542	35,662	39,588	36,192	36,092	39,126	42,488
Portugal	5,690	6,648	7,503	7,627	8,041	9,599	10,175	9,061	9,286	9,415	8,345	9,031	9,436	8,257	8,676	9,067	9,971

TABLE S6-2

Value added of KTI industries, by region, country, or economy: 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
Romania	2,085	2,788	3,350	4,225	5,914	8,453	10,913	8,789	9,138	11,110	10,447	13,835	14,855	13,775	15,117	17,260	20,283
Slovakia	1,871	2,677	3,324	3,800	4,785	6,821	9,171	7,019	8,518	9,841	9,401	9,537	10,334	9,017	9,673	10,111	11,339
Spain	49,626	62,368	71,762	75,180	82,603	95,193	106,269	95,306	88,028	94,505	85,711	92,479	97,427	88,237	90,628	94,492	103,802
Sweden	36,921	46,338	56,433	57,350	61,723	70,923	71,399	55,336	69,136	78,940	73,067	78,310	76,538	71,958	72,091	74,896	80,591
United Kingdom	141,500	159,061	183,496	187,117	199,142	217,447	213,870	163,170	175,914	192,433	190,723	197,782	216,214	208,788	198,242	195,211	212,220
Other Europe	89,007	104,703	128,272	148,834	171,463	213,927	264,173	204,360	236,935	290,597	292,397	308,764	290,705	230,486	233,243	258,047	271,960
Norway	9,467	11,063	12,493	13,901	15,392	19,306	22,515	19,611	21,181	23,190	23,129	24,210	23,528	18,972	18,290	19,686	21,141
Russia	24,409	28,015	38,870	49,780	62,879	86,106	113,056	71,272	88,660	116,683	122,822	129,939	114,025	67,454	67,420	78,292	82,591
Switzerland	42,689	49,447	56,409	59,406	64,127	71,832	84,133	79,647	86,797	104,310	99,382	103,327	105,523	100,218	102,465	104,794	113,854
Turkey	10,115	13,131	16,518	20,671	22,736	28,022	33,514	26,011	29,978	33,246	32,569	37,320	36,178	36,906	36,972	44,798	40,781
Ukraine	2,327	3,047	3,983	5,076	6,330	8,661	10,954	7,820	10,319	13,167	14,495	13,968	11,452	6,936	8,097	10,477	13,592
Middle East	38,103	41,944	48,540	54,314	64,490	83,511	98,217	100,396	111,269	122,348	123,317	123,611	133,202	127,863	137,341	147,140	148,539
Bahrain	379	408	453	569	714	883	1,067	926	1,049	1,133	1,196	1,258	1,323	1,223	1,347	1,410	1,553
Iran	9,137	10,992	13,067	14,964	19,601	24,926	28,427	34,009	36,501	37,544	29,494	21,675	25,388	23,587	26,530	29,133	21,451
Israel	14,274	14,583	15,689	16,429	18,087	20,797	24,279	24,913	26,960	29,639	30,526	34,548	36,023	35,959	37,609	40,940	43,024
Jordan	1,007	997	1,137	1,207	1,442	1,741	2,051	2,051	1,960	1,895	2,021	2,194	2,390	2,489	2,753	2,825	3,184
Kuwait	1,052	1,216	1,573	1,779	1,551	2,029	2,611	2,501	2,923	3,473	4,246	4,074	3,646	2,363	2,998	3,314	4,034
Qatar	789	1,161	1,979	2,478	2,985	6,451	8,779	6,497	8,088	11,242	13,701	14,319	15,147	10,117	9,112	9,421	11,142
Saudi Arabia	7,192	7,748	8,870	10,048	11,521	15,985	18,573	19,290	22,950	25,198	28,877	31,420	33,970	36,538	37,681	39,765	42,806
United Arab Emirates	4,274	4,839	5,772	6,839	8,588	10,699	12,430	10,209	10,838	12,222	13,257	14,122	15,313	15,588	19,311	20,332	21,344
Africa	21,489	26,978	33,408	39,019	42,882	48,835	55,393	55,431	63,861	70,528	76,554	83,064	88,306	79,565	75,134	73,402	81,576
Cameroon	248	297	347	377	412	460	568	585	593	668	665	730	760	664	732	774	873
Egypt	2,408	1,973	2,446	2,929	3,291	4,065	5,088	5,680	6,469	8,187	9,795	9,145	8,924	8,895	8,888	8,388	10,588
Kenya	330	398	444	476	625	769	868	847	772	813	1,036	1,061	1,112	1,195	1,262	1,248	1,371
Morocco	3,412	3,955	4,412	5,225	5,471	6,489	7,267	7,237	7,969	7,984	7,677	8,824	9,559	7,973	8,550	9,476	10,434
Nigeria	5,285	6,054	7,934	10,576	14,813	17,919	22,797	22,407	25,528	29,894	34,344	41,637	46,882	41,449	36,695	33,103	36,919
Senegal	259	317	362	371	381	436	526	516	522	613	567	577	594	479	554	628	704
South Africa	8,459	12,659	15,986	17,490	16,101	16,732	15,887	15,846	19,406	19,692	19,765	18,333	17,694	16,439	15,782	16,935	17,907
Tunisia	1,089	1,325	1,477	1,576	1,786	1,964	2,392	2,313	2,602	2,677	2,704	2,756	2,779	2,469	2,670	2,850	2,780
Zimbabwe	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Asia	1,025,302	1,160,870	1,308,641	1,404,968	1,506,871	1,701,061	1,912,443	1,893,560	2,296,871	2,606,974	2,781,662	2,826,494	2,996,073	3,037,681	3,179,564	3,438,543	3,798,970
Bangladesh	2,036	2,116	2,206	2,282	2,491	2,714	3,016	3,791	4,057	4,082	4,173	4,936	5,804	6,586	7,955	9,197	10,452
China	215,155	257,598	291,181	345,215	419,766	536,684	695,414	751,678	928,671	1,134,976	1,275,299	1,431,468	1,574,041	1,644,512	1,697,668	1,905,819	2,184,420
India	29,105	34,491	43,015	51,823	59,229	75,447	82,250	89,370	110,452	133,384	129,981	133,129	147,204	161,211	169,194	190,867	209,216
Indonesia	14,983	18,597	19,947	19,760	21,882	27,618	34,789	34,425	43,373	50,486	52,126	56,841	55,504	52,559	54,946	58,626	58,859
Japan	566,996	627,454	686,595	689,936	668,540	685,795	740,750	685,064	792,586	821,220	841,816	690,879	668,066	634,329	710,755	672,049	703,853

TABLE S6-2

Value added of KTI industries, by region, country, or economy: 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
Malaysia	14,873	16,890	19,742	18,917	22,067	23,699	25,134	19,941	26,382	29,846	32,936	33,990	35,124	34,289	32,990	35,573	39,907
Pakistan	2,755	3,546	4,864	6,032	7,033	7,709	8,368	7,363	8,724	10,821	11,466	11,551	12,834	13,581	14,063	15,560	14,695
Philippines	5,698	5,270	5,928	6,332	7,268	9,444	8,905	9,663	10,402	11,494	12,745	11,297	12,707	13,609	14,880	15,457	15,057
Singapore	16,425	17,347	22,598	24,441	29,417	32,309	28,844	29,083	38,434	43,702	44,717	43,755	45,801	44,446	45,567	52,713	57,592
South Korea	91,193	101,326	124,874	143,755	162,476	183,111	163,089	150,630	196,751	222,166	225,748	245,557	259,776	255,700	249,018	279,982	294,374
Sri Lanka	493	562	638	817	2,027	991	887	927	1,210	1,345	1,225	1,292	1,198	1,171	1,105	1,223	1,249
Taiwan	51,035	58,279	66,763	72,602	77,399	82,539	83,348	76,722	96,014	103,040	104,212	109,874	121,760	121,577	123,745	137,070	139,682
Thailand	13,039	15,675	18,193	20,471	23,936	28,590	32,208	28,124	32,354	32,089	35,159	39,147	34,411	33,826	34,432	35,519	38,940
Vietnam	1,516	1,719	2,098	2,584	3,340	4,409	5,441	6,780	7,460	8,322	10,057	12,776	21,842	20,285	23,248	28,889	30,674
Oceania	31,693	40,281	48,577	52,630	55,783	68,354	72,350	71,443	87,932	103,233	104,936	97,401	93,589	78,759	80,095	88,604	89,172
Australia	28,750	36,534	44,101	47,709	51,368	62,856	67,412	66,843	82,562	97,327	98,617	90,625	86,540	72,488	73,899	81,653	81,960
New Zealand	2,943	3,748	4,475	4,921	4,415	5,498	4,938	4,600	5,369	5,905	6,319	6,776	7,048	6,271	6,196	6,951	7,212

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

Note(s):

Value added is the amount contributed by a country, firm, 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 classified by the Organisation for Economic Co-operation and Development. High R&D intensive industries include aircraft; pharmaceuticals; computer, electronic, and optical products; scientific research and development services; and software publishing. Medium-high R&D intensive industries include weapons and ammunition; motor vehicles; medical and dental instruments; machinery and equipment; chemicals and chemical products; electrical equipment; railroad, military vehicles, and transport; and IT and other information services. Data on the software publishing are not available; data on the publishing industry, which includes software publishing, are used as a proxy for this industry. Data on medical and dental instruments and military vehicles are not available. Detail may not add to total because of rounding or minor discrepancies. World total does not include all countries and economies due to limitations in data availability. See [Table S6-1](#) for a full list of countries and economies in each region.

Source(s):

IHS Markit, special tabulations (2019) of Comparative Industry Service.

Science and Engineering Indicators

TABLE S6-3

Value added of high R&D intensive industries, by region, country, or economy: 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
World	1,357,048	1,521,107	1,681,509	1,785,562	1,902,249	2,112,860	2,235,513	2,142,157	2,324,795	2,510,015	2,530,752	2,622,041	2,730,108	2,737,141	2,813,346	2,987,715	3,241,776
North America	580,930	616,705	647,507	693,620	720,246	781,137	793,297	790,602	812,819	829,181	838,936	867,005	897,844	947,202	977,950	1,026,218	1,101,230
Canada	17,242	20,740	23,160	25,879	29,635	32,029	32,621	29,401	32,526	33,731	34,158	33,391	33,961	30,279	28,021	28,489	29,754
Mexico	25,749	22,615	20,628	22,086	23,778	24,423	23,399	17,527	19,567	19,926	21,864	22,041	25,174	26,140	24,094	25,375	26,175
United States	537,939	573,351	603,720	645,655	666,833	724,685	737,277	743,673	760,726	775,523	782,914	811,572	838,709	890,784	925,835	972,354	1,044,722
Central and South America	21,603	20,799	26,152	30,938	37,337	44,650	53,336	50,584	60,022	67,928	69,345	70,888	67,605	60,218	54,471	63,581	61,730
Argentina	2,042	2,427	3,085	3,751	4,390	5,506	6,850	6,916	8,250	9,697	10,446	10,917	9,735	11,130	9,988	11,751	9,543
Bolivia	133	134	135	144	148	159	206	242	250	274	302	333	352	383	431	458	500
Brazil	10,923	10,209	13,372	16,355	20,434	23,989	28,450	24,193	30,773	34,039	31,130	30,935	29,494	20,540	20,497	24,997	23,454
Chile	1,943	1,849	2,481	2,596	3,289	3,871	4,310	4,676	5,494	6,719	7,573	8,193	7,824	7,384	7,271	7,942	8,625
Colombia	2,304	2,171	2,719	3,252	3,597	4,575	5,350	5,329	6,483	7,243	7,985	8,198	8,374	6,676	6,606	7,267	7,793
Costa Rica	381	386	433	474	550	657	751	760	928	1,066	1,215	1,333	1,444	1,689	1,777	1,838	1,886
Ecuador	875	924	918	949	1,008	1,265	1,389	1,567	1,745	1,716	2,290	2,359	2,336	2,274	2,194	2,228	2,324
Honduras	157	166	171	185	190	201	222	247	249	273	293	284	290	282	293	307	316
Jamaica	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Panama	311	329	357	375	414	445	503	576	637	695	770	867	908	974	1,033	1,117	1,208
Peru	817	795	839	927	1,064	1,244	1,567	1,623	1,901	2,141	2,393	2,479	2,374	2,167	2,182	2,341	2,474
Uruguay	361	290	316	404	457	542	746	816	1,037	1,221	1,400	1,586	1,615	1,558	1,617	1,800	1,840
Venezuela	1,355	1,120	1,324	1,527	1,797	2,197	2,993	3,639	2,274	2,845	3,549	3,403	2,859	5,161	582	1,536	1,768
Europe	360,547	428,996	490,009	513,275	548,988	632,734	682,952	605,509	626,281	686,998	654,146	693,506	705,577	651,698	665,009	684,088	754,038
EU	321,037	380,501	431,471	447,212	473,609	539,624	572,898	509,924	515,704	552,677	516,569	543,595	562,096	537,161	548,868	558,141	619,467
Austria	5,102	6,097	6,814	7,826	8,291	8,067	8,285	7,721	7,654	8,897	8,462	9,412	9,490	8,226	8,608	8,818	9,754
Belgium	7,260	8,749	9,716	10,591	10,443	12,283	13,467	11,910	12,907	12,814	12,517	13,833	14,346	11,921	13,067	13,687	16,736
Bulgaria	166	219	237	283	351	532	607	737	969	1,126	1,089	1,145	1,161	1,181	1,252	1,285	1,470
Czechia	1,934	2,426	2,791	3,333	3,909	4,854	5,600	4,858	5,199	5,710	6,025	6,003	6,374	5,687	6,131	6,695	7,504
Denmark	6,093	8,015	8,555	8,946	9,249	10,232	12,101	11,845	13,161	13,599	13,652	15,275	16,885	16,661	18,255	18,437	20,339
Finland	10,757	13,268	14,737	15,363	16,412	19,846	21,031	15,019	14,132	13,330	9,107	11,104	11,415	9,111	9,202	9,366	10,017
France	63,196	75,045	82,086	84,225	89,886	99,550	106,707	98,705	96,554	102,685	98,143	104,227	106,431	92,827	95,056	98,188	106,690
Germany	65,796	81,820	95,288	99,947	103,635	124,343	133,224	113,534	118,074	130,534	123,632	129,913	136,271	120,263	124,440	127,148	143,944
Greece	2,132	2,716	3,087	3,307	3,435	3,852	3,316	3,503	3,349	2,726	2,594	2,652	2,454	2,077	1,911	1,990	2,276
Hungary	2,422	3,502	4,509	5,164	5,272	5,306	5,826	4,936	5,280	6,240	5,289	5,533	5,558	4,966	5,106	5,537	6,054
Ireland	23,513	24,388	26,166	26,173	26,461	29,837	30,288	34,111	33,364	36,361	31,279	32,848	37,232	69,111	72,897	72,572	83,831
Italy	28,000	33,287	37,444	37,598	39,255	44,357	48,150	43,357	43,556	45,468	41,132	41,486	38,875	35,418	36,568	37,243	40,462
Netherlands	11,349	12,818	14,371	15,778	16,470	18,979	19,514	18,516	17,644	17,344	15,967	14,911	14,786	13,267	12,825	12,668	13,572
Poland	3,467	3,847	4,399	5,414	6,127	8,257	10,297	9,368	8,954	9,213	8,819	8,575	9,651	7,883	8,115	8,885	9,202
Portugal	1,494	1,790	2,088	2,200	2,347	2,853	3,022	2,620	2,615	2,427	2,157	2,349	2,410	2,058	2,171	2,313	2,557

TABLE S6-3

Value added of high R&D intensive industries, by region, country, or economy: 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
Romania	550	835	1,009	1,272	2,028	2,868	4,015	3,403	3,376	4,214	4,000	5,970	6,219	5,990	6,284	6,490	7,314
Slovakia	398	496	644	794	1,139	1,337	1,930	1,502	1,722	1,808	1,657	1,381	1,521	1,194	1,319	1,263	1,384
Spain	12,652	16,022	18,239	20,127	21,862	25,378	29,313	27,099	23,966	25,837	23,654	26,729	27,591	24,183	25,225	25,852	28,369
Sweden	15,699	20,349	26,510	26,768	28,917	32,094	31,373	27,480	32,068	35,094	32,944	36,796	35,868	30,184	29,611	30,690	32,348
United Kingdom	59,057	64,811	72,782	72,106	78,120	84,801	84,832	69,700	71,161	77,247	74,450	73,454	77,557	74,952	70,824	69,014	75,643
Other Europe	39,511	48,495	58,538	66,063	75,379	93,110	110,055	95,585	110,577	134,321	137,576	149,911	143,481	114,537	116,141	125,947	134,572
Norway	4,170	5,177	5,742	6,091	6,496	7,867	8,145	7,267	7,756	8,029	8,083	8,281	7,842	6,800	6,884	7,330	7,778
Russia	9,020	11,468	15,295	18,407	23,434	32,186	38,959	29,467	38,049	49,481	52,807	61,271	54,733	32,251	31,227	36,301	37,707
Switzerland	22,687	27,299	31,743	33,996	36,993	41,883	49,261	46,855	50,857	61,967	61,148	63,521	64,784	61,023	62,956	64,180	71,153
Turkey	2,674	3,324	4,210	5,631	6,033	7,827	9,584	8,965	10,238	10,498	10,526	11,591	11,784	12,184	12,304	14,739	13,898
Ukraine	960	1,227	1,546	1,937	2,424	3,346	4,106	3,030	3,677	4,346	5,013	5,247	4,338	2,279	2,769	3,398	4,035
Middle East	16,759	17,965	20,104	21,580	24,383	29,642	33,658	35,514	39,022	42,857	42,933	42,013	45,075	44,883	47,103	49,894	49,208
Bahrain	152	164	183	223	270	325	379	350	394	408	432	453	481	484	511	531	577
Iran	2,680	3,187	3,821	4,408	5,466	7,374	8,826	10,307	11,491	12,846	10,015	7,631	8,771	8,863	9,671	10,339	7,458
Israel	10,572	10,899	11,696	11,989	12,811	14,548	15,992	16,689	18,456	19,996	21,558	21,869	22,685	22,004	22,537	24,214	25,318
Jordan	471	502	555	612	723	854	916	903	938	955	1,045	1,101	1,299	1,310	1,467	1,603	1,702
Kuwait	258	315	402	421	372	455	573	540	631	827	891	881	862	672	799	857	1,022
Qatar	67	70	122	155	343	528	620	675	657	902	1,060	1,244	1,340	1,474	1,600	1,438	1,584
Saudi Arabia	982	1,030	1,154	1,272	1,413	1,621	1,833	2,122	2,369	2,573	3,140	3,601	3,891	4,005	4,130	4,320	4,618
United Arab Emirates	1,577	1,798	2,171	2,501	2,986	3,938	4,518	3,927	4,085	4,351	4,793	5,233	5,745	6,070	6,387	6,592	6,929
Africa	6,649	8,294	10,012	11,552	13,458	14,750	15,743	15,932	18,563	21,812	23,466	24,501	26,124	24,217	23,055	22,462	24,607
Cameroon	152	185	212	231	255	284	331	346	352	397	399	444	460	403	444	462	514
Egypt	698	573	667	827	952	1,172	1,441	1,642	1,925	2,829	3,822	3,515	3,562	3,756	3,512	2,926	3,725
Kenya	116	139	146	165	177	222	237	246	256	241	300	312	309	298	318	326	354
Morocco	1,021	1,247	1,429	1,727	1,867	2,101	2,209	2,368	2,464	2,567	2,518	2,780	2,928	2,530	2,680	2,947	3,190
Nigeria	1,905	2,124	2,584	3,188	4,563	5,096	5,823	4,977	5,784	7,371	8,595	10,001	11,477	10,534	9,447	8,388	9,143
Senegal	117	145	171	180	199	242	288	289	291	327	316	334	346	246	317	354	392
South Africa	2,104	3,218	4,087	4,490	4,630	4,989	4,679	5,303	6,690	7,206	6,673	6,205	6,102	5,599	5,471	6,179	6,396
Tunisia	537	664	716	744	815	643	734	761	801	874	843	911	941	851	866	880	891
Zimbabwe	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Asia	356,274	410,145	465,910	490,590	531,787	578,726	623,604	612,026	728,795	814,386	853,350	879,618	946,365	972,780	1,007,124	1,097,273	1,205,674
Bangladesh	1,130	1,219	1,293	1,363	1,497	1,615	1,800	2,197	2,385	2,441	2,513	2,979	3,456	3,918	4,793	5,482	6,329
China	75,984	92,146	104,303	123,212	146,792	172,230	210,921	220,532	261,773	315,267	368,056	414,249	463,482	499,950	517,359	583,723	669,410
India	8,505	9,881	11,723	14,257	16,132	20,558	22,180	23,013	28,149	34,317	33,136	36,650	40,461	44,887	50,216	56,050	60,995
Indonesia	3,989	4,784	4,492	4,805	5,874	7,681	9,173	9,079	10,556	10,564	8,720	9,015	8,508	8,469	9,197	9,835	9,393
Japan	167,322	190,061	207,030	197,351	189,590	186,855	197,780	191,127	215,785	220,387	198,962	161,607	151,047	146,769	158,985	140,999	146,178

TABLE S6-3

Value added of high R&D intensive industries, by region, country, or economy: 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
Malaysia	8,481	9,853	11,208	10,582	11,623	13,132	13,012	9,726	13,211	15,495	17,320	18,235	19,244	16,970	16,901	18,054	19,783
Pakistan	1,116	1,374	1,751	2,188	2,832	3,194	3,394	3,333	3,898	4,814	5,231	5,516	6,333	6,766	7,316	8,102	7,619
Philippines	3,427	2,966	3,408	3,731	4,477	6,113	4,940	5,608	5,701	6,503	7,463	5,927	5,911	6,249	6,664	6,988	7,006
Singapore	11,928	12,458	16,505	18,012	22,407	23,455	20,921	20,341	27,087	29,671	31,842	28,352	28,892	28,378	26,622	32,951	35,669
South Korea	37,936	41,873	54,769	61,181	68,889	77,758	69,088	63,332	82,430	91,269	92,725	102,478	107,035	103,607	99,543	112,230	118,449
Sri Lanka	150	157	158	186	194	247	272	293	315	381	424	447	462	453	419	458	455
Taiwan	30,847	37,008	42,290	46,118	53,125	55,732	58,954	52,522	63,769	69,586	72,004	76,798	87,092	84,708	85,777	94,535	95,094
Thailand	4,813	5,676	6,164	6,718	7,354	8,883	9,592	9,184	11,525	10,910	10,746	11,163	11,126	9,625	9,396	9,549	10,117
Vietnam	646	691	817	886	1,002	1,272	1,576	1,740	2,211	2,782	4,208	6,203	13,318	12,032	13,936	18,316	19,177
Oceania	14,286	18,203	21,814	24,006	26,050	31,220	32,923	31,990	39,294	46,852	48,576	44,510	41,518	36,143	38,634	44,197	45,289
Australia	13,536	17,214	20,613	22,689	24,855	29,665	31,551	30,721	37,836	45,289	46,926	42,737	39,760	34,622	37,150	42,560	43,631
New Zealand	750	989	1,201	1,317	1,195	1,555	1,372	1,269	1,457	1,563	1,649	1,773	1,759	1,521	1,484	1,637	1,658

EU = European Union.

Note(s):

Value added is the amount contributed by a country, firm, or other entity to the value of a good or service and excludes purchases of domestic and imported materials and inputs. High R&D intensive industries include aircraft; pharmaceuticals; computer, electronic, and optical products; scientific research and development services; and software publishing classified by the Organisation for Economic Co-operation and Development. Data on the software publishing are not available; data on the publishing industry, which includes software publishing, are used as a proxy for this industry. Detail may not add to total because of rounding or minor discrepancies. World total does not include all countries and economies due to limitations in data availability. See Table S6-1 for a full list of countries and economies in each region.

Source(s):

IHS Markit, special tabulations (2019) of Comparative Industry Service.

Science and Engineering Indicators

TABLE S6-4

Value added of medium-high R&D intensive industries, by region, country, or economy: 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
World	2,115,990	2,355,213	2,624,159	2,788,709	3,012,468	3,419,844	3,768,250	3,405,254	3,979,571	4,498,171	4,601,325	4,754,042	4,949,749	4,808,112	4,965,841	5,289,404	5,778,935
North America	673,113	682,608	708,271	739,178	789,980	807,662	829,869	750,840	881,336	962,955	1,010,858	1,071,014	1,107,620	1,159,226	1,205,170	1,276,851	1,395,292
Canada	46,169	50,203	53,207	56,455	59,275	64,179	60,493	53,138	64,355	74,758	77,792	77,635	74,782	68,867	63,402	67,999	71,411
Mexico	35,704	32,151	35,870	38,802	46,359	48,514	50,865	37,917	49,965	55,780	63,307	66,664	67,714	67,597	63,793	68,584	71,864
United States	591,240	600,254	619,194	643,921	684,346	694,969	718,511	659,785	767,015	832,417	869,758	926,715	965,123	1,022,762	1,077,975	1,140,267	1,251,693
Central and South America	48,225	53,718	67,162	83,332	99,028	129,135	162,878	149,090	189,133	218,583	201,889	203,213	183,420	148,539	129,419	146,951	143,678
Argentina	4,327	5,559	7,108	8,881	10,874	13,889	18,075	17,191	20,196	22,569	22,354	22,064	15,636	15,356	14,101	16,275	13,653
Bolivia	112	111	115	118	126	137	182	208	217	237	258	284	301	323	357	379	418
Brazil	31,699	36,143	45,857	56,604	68,122	91,146	115,662	101,007	138,806	161,984	141,296	141,719	129,821	90,305	86,454	97,686	94,826
Chile	1,381	1,603	1,965	3,256	3,253	3,683	4,079	4,261	5,522	6,166	6,460	7,112	7,260	6,991	6,804	7,020	7,624
Colombia	3,271	3,255	3,932	4,783	5,444	6,863	7,627	7,272	8,699	9,439	10,267	10,458	10,391	8,496	8,237	8,737	9,203
Costa Rica	728	717	806	927	1,049	1,199	1,306	1,173	1,440	1,643	1,777	1,830	1,850	1,921	2,019	2,126	2,227
Ecuador	634	524	484	620	650	844	924	987	1,097	952	1,189	1,157	1,220	1,187	1,183	1,152	1,221
Honduras	478	489	482	572	687	752	827	746	877	1,051	1,180	1,177	1,192	1,187	1,251	1,325	1,403
Jamaica	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Panama	214	226	243	256	283	304	343	383	428	473	545	629	662	713	753	813	897
Peru	1,555	1,670	1,802	2,027	2,310	2,672	3,303	3,267	3,947	4,469	5,161	5,770	5,676	5,393	5,072	5,725	6,081
Uruguay	364	309	327	380	425	494	715	679	1,001	1,129	1,259	1,388	1,445	1,375	1,363	1,481	1,513
Venezuela	3,460	3,110	4,040	4,906	5,804	7,151	9,836	11,916	6,904	8,470	10,144	9,625	7,966	15,293	1,823	4,232	4,612
Europe	672,032	803,421	927,401	962,997	1,049,112	1,235,625	1,343,028	1,079,955	1,174,844	1,339,458	1,270,434	1,339,888	1,406,622	1,254,502	1,275,034	1,331,741	1,446,487
EU	622,536	747,214	857,667	880,226	953,028	1,114,808	1,188,910	971,180	1,048,486	1,183,183	1,115,613	1,181,035	1,259,398	1,138,553	1,157,932	1,199,642	1,309,099
Austria	13,618	16,762	19,168	20,458	22,658	28,331	31,875	27,669	27,035	31,446	30,263	32,075	33,166	28,535	29,503	30,279	33,793
Belgium	17,967	20,950	23,252	24,156	25,054	28,069	30,007	26,500	27,301	30,409	28,463	29,225	30,479	26,325	26,895	28,510	31,362
Bulgaria	434	574	783	935	1,042	1,421	1,458	1,273	1,367	1,796	1,595	1,739	1,966	1,897	2,132	2,534	2,863
Czechia	6,681	7,931	10,414	12,562	15,293	19,643	23,512	19,688	21,526	25,482	23,175	23,569	25,779	23,526	24,990	27,551	30,406
Denmark	9,444	10,361	11,981	11,582	13,495	16,033	18,566	16,804	16,515	17,595	16,631	18,412	18,000	16,835	17,747	17,610	19,211
Finland	7,662	9,232	11,091	11,933	13,020	16,342	18,630	15,099	15,419	17,928	16,676	17,368	18,485	16,672	16,917	17,953	19,903
France	76,710	90,776	102,820	102,651	106,726	122,778	132,868	116,817	114,525	123,272	115,942	122,145	126,523	110,338	115,021	121,279	130,523
Germany	222,842	269,801	305,098	308,950	337,760	397,008	418,340	336,834	388,253	452,351	426,501	454,058	489,394	426,845	437,020	450,581	487,743
Greece	1,794	2,495	3,123	3,183	3,648	3,934	4,416	3,589	3,538	3,308	3,180	3,447	3,492	3,090	3,196	3,256	3,702
Hungary	4,290	5,619	6,931	7,946	8,854	11,578	12,447	9,847	10,947	11,937	11,244	12,654	14,129	13,559	13,166	14,056	14,904
Ireland	5,497	6,310	7,213	8,220	8,412	11,331	12,716	10,667	9,508	12,108	14,602	14,168	15,186	24,313	22,701	22,705	27,779
Italy	75,430	90,693	103,061	104,278	111,354	129,795	137,646	115,872	119,676	128,094	116,376	122,346	129,135	110,905	113,443	115,929	125,110
Netherlands	24,884	30,688	36,547	37,699	42,203	50,535	54,848	43,279	45,852	51,855	46,408	48,448	50,090	45,934	48,232	51,744	57,925
Poland	7,440	9,444	11,588	13,642	15,714	18,905	24,269	20,365	21,908	25,983	25,724	27,087	29,936	28,309	27,977	30,240	33,286
Portugal	4,196	4,859	5,415	5,427	5,693	6,747	7,152	6,441	6,672	6,988	6,188	6,682	7,026	6,199	6,505	6,754	7,414

TABLE S6-4

Value added of medium-high R&D intensive industries, by region, country, or economy: 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
Romania	1,535	1,953	2,341	2,953	3,886	5,585	6,898	5,386	5,762	6,897	6,447	7,865	8,636	7,785	8,833	10,770	12,969
Slovakia	1,474	2,181	2,681	3,007	3,646	5,484	7,241	5,516	6,796	8,033	7,744	8,156	8,814	7,823	8,354	8,848	9,955
Spain	36,975	46,346	53,523	55,053	60,741	69,815	76,956	68,207	64,063	68,668	62,058	65,749	69,835	64,054	65,403	68,639	75,433
Sweden	21,221	25,989	29,922	30,582	32,805	38,829	40,026	27,856	37,069	43,846	40,124	41,514	40,671	41,774	42,480	44,206	48,243
United Kingdom	82,443	94,250	110,714	115,011	121,022	132,647	129,037	93,470	104,753	115,186	116,274	124,327	138,657	133,836	127,418	126,196	136,577
Other Europe	49,496	56,208	69,734	82,771	96,084	120,817	154,118	108,775	126,358	156,275	154,820	158,853	147,225	115,949	117,102	132,099	137,388
Norway	5,297	5,886	6,750	7,810	8,896	11,439	14,369	12,344	13,425	15,161	15,046	15,929	15,686	12,172	11,406	12,357	13,364
Russia	15,389	16,547	23,574	31,373	39,445	53,920	74,097	41,805	50,611	67,202	70,015	68,668	59,292	35,203	36,193	41,991	44,884
Switzerland	20,002	22,147	24,666	25,409	27,134	29,948	34,873	32,791	35,940	42,343	38,234	39,806	40,739	39,195	39,509	40,614	42,701
Turkey	7,441	9,807	12,307	15,040	16,703	20,195	23,931	17,045	19,741	22,748	22,043	25,729	24,395	24,722	24,667	30,059	26,883
Ukraine	1,368	1,820	2,436	3,139	3,906	5,315	6,848	4,790	6,641	8,821	9,481	8,721	7,114	4,657	5,327	7,079	9,557
Middle East	21,344	23,979	28,436	32,733	40,107	53,869	64,559	64,882	72,247	79,490	80,384	81,598	88,126	82,980	90,238	97,246	99,331
Bahrain	227	244	269	345	444	557	687	575	655	726	764	805	842	739	836	879	977
Iran	6,457	7,805	9,246	10,556	14,135	17,552	19,601	23,702	25,010	24,699	19,479	14,044	16,617	14,724	16,859	18,794	13,993
Israel	3,702	3,685	3,993	4,441	5,276	6,249	8,287	8,223	8,504	9,643	8,968	12,679	13,338	13,954	15,071	16,726	17,707
Jordan	536	495	583	595	720	888	1,135	1,148	1,022	940	976	1,093	1,091	1,179	1,286	1,222	1,482
Kuwait	794	901	1,171	1,358	1,179	1,574	2,038	1,961	2,291	2,646	3,355	3,194	2,784	1,690	2,199	2,457	3,012
Qatar	722	1,091	1,856	2,323	2,642	5,923	8,159	5,822	7,431	10,340	12,641	13,075	13,808	8,643	7,512	7,983	9,557
Saudi Arabia	6,210	6,718	7,716	8,776	10,108	14,364	16,740	17,168	20,581	22,626	25,737	27,819	30,079	32,532	33,551	35,445	38,189
United Arab Emirates	2,697	3,041	3,601	4,338	5,602	6,761	7,911	6,282	6,753	7,871	8,464	8,889	9,568	9,518	12,924	13,740	14,414
Africa	14,840	18,684	23,396	27,467	29,423	34,085	39,650	39,499	45,298	48,715	53,088	58,563	62,182	55,347	52,079	50,940	56,968
Cameroon	96	112	134	145	157	176	236	238	241	271	266	286	301	262	289	312	358
Egypt	1,710	1,400	1,779	2,102	2,340	2,893	3,647	4,038	4,544	5,358	5,973	5,630	5,363	5,139	5,376	5,462	6,862
Kenya	214	259	298	311	448	547	631	601	516	572	736	749	803	897	944	921	1,017
Morocco	2,391	2,708	2,984	3,498	3,604	4,388	5,058	4,869	5,506	5,417	5,159	6,044	6,632	5,443	5,870	6,528	7,244
Nigeria	3,380	3,931	5,350	7,388	10,249	12,823	16,974	17,431	19,744	22,523	25,749	31,636	35,405	30,915	27,248	24,715	27,776
Senegal	142	172	190	191	182	194	237	227	231	286	252	244	249	232	237	274	312
South Africa	6,355	9,441	11,899	13,000	11,472	11,743	11,208	10,543	12,717	12,486	13,092	12,128	11,593	10,840	10,311	10,756	11,510
Tunisia	552	662	761	832	972	1,321	1,659	1,551	1,801	1,803	1,861	1,845	1,838	1,618	1,804	1,971	1,889
Zimbabwe	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Asia	669,029	750,724	842,732	914,378	975,084	1,122,335	1,288,839	1,281,534	1,568,076	1,792,589	1,928,312	1,946,876	2,049,708	2,064,901	2,172,440	2,341,269	2,593,296
Bangladesh	906	897	914	919	994	1,099	1,216	1,594	1,672	1,642	1,661	1,957	2,348	2,669	3,162	3,716	4,124
China	139,172	165,452	186,878	222,003	272,974	364,454	484,493	531,146	666,898	819,709	907,243	1,017,220	1,110,559	1,144,562	1,180,309	1,322,095	1,515,010
India	20,600	24,610	31,292	37,566	43,097	54,889	60,069	66,357	82,304	99,067	96,846	96,479	106,744	116,324	118,978	134,817	148,221
Indonesia	10,994	13,813	15,455	14,955	16,008	19,937	25,616	25,346	32,817	39,923	43,406	47,826	46,996	44,090	45,749	48,791	49,465
Japan	399,673	437,393	479,565	492,585	478,950	498,940	542,970	493,937	576,801	600,833	642,854	529,273	517,019	487,559	551,769	531,050	557,675

TABLE S6-4

Value added of medium-high R&D intensive industries, by region, country, or economy: 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
Malaysia	6,392	7,038	8,534	8,335	10,444	10,566	12,122	10,214	13,171	14,350	15,616	15,755	15,880	17,319	16,089	17,519	20,124
Pakistan	1,639	2,172	3,113	3,845	4,200	4,515	4,974	4,030	4,826	6,007	6,235	6,035	6,501	6,815	6,747	7,458	7,076
Philippines	2,270	2,304	2,520	2,601	2,791	3,332	3,965	4,055	4,702	4,992	5,282	5,369	6,795	7,360	8,216	8,468	8,051
Singapore	4,498	4,889	6,093	6,429	7,011	8,854	7,924	8,743	11,347	14,031	12,875	15,403	16,909	16,069	18,944	19,761	21,923
South Korea	53,257	59,453	70,105	82,574	93,587	105,353	94,001	87,298	114,321	130,897	133,023	143,079	152,741	152,093	149,475	167,752	175,925
Sri Lanka	343	405	480	631	1,833	744	615	634	895	965	801	845	736	718	686	765	795
Taiwan	20,188	21,271	24,473	26,484	24,274	26,807	24,393	24,200	32,245	33,454	32,208	33,077	34,669	36,869	37,967	42,535	44,588
Thailand	8,226	10,000	12,029	13,753	16,582	19,707	22,616	18,940	20,829	21,179	24,412	27,985	23,285	24,202	25,036	25,969	28,823
Vietnam	870	1,028	1,282	1,698	2,338	3,138	3,865	5,040	5,250	5,540	5,849	6,573	8,525	8,253	9,312	10,572	11,497
Oceania	17,407	22,078	26,763	28,624	29,733	37,133	39,427	39,453	48,638	56,381	56,361	52,891	52,071	42,616	41,461	44,407	43,883
Australia	15,215	19,320	23,488	25,020	26,513	33,191	35,861	36,122	44,726	52,038	51,691	47,887	46,781	37,867	36,749	39,093	38,329
New Zealand	2,193	2,759	3,275	3,604	3,220	3,943	3,566	3,332	3,912	4,343	4,670	5,004	5,290	4,750	4,712	5,314	5,553

EU = European Union.

Note(s):

Value added is the amount contributed by a country, firm, or other entity to the value of a good or service and excludes purchases of domestic and imported materials and inputs. Medium-high R&D intensive industries include weapons and ammunition; motor vehicles; medical and dental instruments; machinery and equipment; chemicals and chemical products; electrical equipment; railroad, military vehicles, and transport; and IT and other information services classified by the Organisation for Economic Co-operation and Development. Data on medical and dental instruments and military vehicles are not available. Detail may not add to total because of rounding or minor discrepancies. World total does not include all countries and economies due to limitations in data availability. See Table S6-1 for a full list of countries and economies in each region.

Source(s):

IHS Markit, special tabulations (2019) of Comparative Industry Service.

Science and Engineering Indicators

TABLE S6-5

Value added of aircraft and spacecraft industry, by region, country, or economy: 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
World	97,210	102,234	110,138	124,629	135,751	159,846	164,590	160,865	171,081	187,872	190,594	205,485	214,006	215,136	217,274	224,360	243,141
North America	58,736	58,034	59,524	70,948	75,114	91,478	89,237	91,452	96,994	104,036	106,244	112,671	117,991	124,160	122,050	123,839	132,625
Canada	3,701	4,479	4,679	4,990	5,569	6,400	7,284	6,143	6,591	6,801	7,554	8,360	8,849	7,931	6,865	7,119	7,677
Mexico	527	389	427	480	519	597	678	534	589	745	997	1,180	1,356	1,389	1,303	1,344	1,462
United States	54,508	53,166	54,417	65,479	69,027	84,481	81,275	84,775	89,814	96,490	97,694	103,131	107,787	114,840	113,883	115,376	123,486
Central and South America	1,750	1,461	1,889	1,531	1,791	1,908	2,268	1,457	2,079	2,362	2,416	2,974	2,599	2,147	2,026	2,648	2,346
Argentina	4	5	6	8	8	10	11	10	10	10	9	9	7	7	6	9	7
Bolivia	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
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	1,878	2,503	2,197
Chile	*	*	*	*	*	*	*	*	*	*	*	*	1	1	1	1	1
Colombia	1	1	*	*	*	1	1	2	2	2	2	*	*	3	2	3	3
Costa Rica	11	7	10	11	13	14	15	14	16	18	20	20	20	20	22	23	24
Ecuador	146	158	113	64	62	91	95	129	130	89	167	135	123	108	113	107	110
Honduras	2	2	2	2	2	2	2	2	3	3	3	3	3	3	3	3	3
Jamaica	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Panama	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Peru	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Uruguay	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Venezuela	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Europe	27,571	31,951	36,440	39,330	43,716	48,648	52,286	47,173	48,090	57,823	58,063	64,462	67,021	60,922	63,441	64,273	70,456
EU	25,536	29,606	33,323	35,251	38,680	42,018	44,532	39,750	39,664	46,919	46,138	50,229	52,970	51,293	53,452	53,488	58,732
Austria	88	34	61	62	95	115	138	39	151	90	109	131	129	137	155	167	196
Belgium	374	385	459	470	486	556	607	538	580	917	966	855	1,000	896	906	819	883
Bulgaria	*	*	*	*	*	1	*	1	*	1	1	*	*	1	1	1	1
Czechia	34	33	39	42	43	66	81	66	195	237	278	355	370	292	311	289	319
Denmark	11	13	11	11	10	10	21	22	16	18	15	37	35	44	43	44	47
Finland	143	174	168	159	160	148	187	132	118	118	112	131	120	88	109	113	126
France	5,760	6,418	5,975	8,080	9,553	10,644	12,435	11,222	10,466	10,933	12,615	13,643	14,712	14,510	15,433	15,063	16,604
Germany	5,756	5,952	6,534	8,318	7,838	9,137	10,404	9,097	10,927	11,378	11,646	12,130	13,027	11,926	12,970	13,573	15,581
Greece	53	68	76	83	143	183	185	196	145	177	131	85	64	88	91	85	91
Hungary	1	1	2	1	2	3	5	4	5	4	6	12	14	13	13	16	21
Ireland	132	385	228	265	226	242	301	121	70	182	125	118	72	91	85	157	174
Italy	2,144	2,425	2,945	2,794	3,042	3,791	4,869	4,475	4,170	4,356	4,233	3,809	4,702	3,755	3,842	3,767	4,362
Netherlands	259	303	331	389	368	480	544	581	544	430	392	399	410	279	274	260	304
Poland	140	147	148	191	269	268	295	342	399	585	735	813	1,017	757	772	813	984
Portugal	7	9	9	7	7	9	9	13	19	13	4	2	3	32	35	36	41

TABLE S6-5

Value added of aircraft and spacecraft industry, by region, country, or economy: 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
Romania	8	13	14	21	32	45	58	75	73	89	102	114	139	119	121	143	159
Slovakia	1	1	1	1	1	5	8	4	6	3	6	9	10	9	8	8	9
Spain	809	1,151	1,314	1,428	1,721	1,796	2,442	2,362	2,296	3,711	3,378	5,083	4,988	4,639	4,953	5,314	5,517
Sweden	915	1,119	1,224	1,351	1,284	1,450	1,585	1,690	1,662	1,807	1,541	1,906	1,969	2,002	1,723	1,635	1,748
United Kingdom	8,903	10,977	13,783	11,575	13,399	13,072	10,357	8,769	7,822	11,870	9,745	10,598	10,189	11,618	11,609	11,184	11,565
Other Europe	2,035	2,344	3,117	4,079	5,036	6,630	7,755	7,423	8,426	10,905	11,925	14,233	14,051	9,629	9,989	10,785	11,723
Norway	41	47	67	69	95	68	86	76	88	95	96	84	97	116	102	105	114
Russia	1,131	1,410	1,949	2,420	3,104	4,314	4,734	4,241	5,024	6,381	7,792	9,701	9,496	5,621	5,671	5,548	5,865
Switzerland	262	329	392	407	458	522	635	610	904	1,384	1,361	1,465	1,491	1,393	1,407	1,374	1,480
Turkey	494	397	463	850	927	1,142	1,558	1,703	1,293	1,572	1,129	1,511	1,675	1,925	2,065	2,869	3,140
Ukraine	106	161	246	333	451	584	741	793	1,117	1,473	1,547	1,472	1,292	574	745	888	1,125
Middle East	555	585	703	738	477	598	791	758	801	899	869	857	892	879	1,080	1,182	1,255
Bahrain	*	*	*	*	*	1	1	1	1	1	1	1	1	1	1	1	1
Iran	22	23	30	34	42	54	67	85	105	100	79	56	67	56	69	82	60
Israel	443	458	541	547	254	318	416	406	390	434	419	452	462	500	565	625	670
Jordan	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Kuwait	31	37	53	59	50	78	136	138	159	209	190	162	159	123	213	220	261
Qatar	1	1	2	2	2	1	*	2	6	9	11	11	12	13	12	13	15
Saudi Arabia	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
United Arab Emirates	59	66	77	96	129	147	171	127	139	147	169	175	191	187	221	241	249
Africa	471	568	614	682	746	609	667	681	728	757	773	852	878	794	842	906	992
Cameroon	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Egypt	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Kenya	2	3	4	3	4	3	4	3	3	3	4	5	3	2	2	2	3
Morocco	71	73	75	111	123	206	241	226	237	242	271	351	382	321	373	443	511
Nigeria	114	120	132	152	174	187	197	205	212	235	237	246	244	225	208	194	212
Senegal	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
South Africa	91	121	141	144	150	163	158	187	198	193	183	165	156	161	169	165	165
Tunisia	191	250	261	272	295	51	68	60	78	84	78	86	94	84	90	102	101
Zimbabwe	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Asia	7,217	8,484	9,575	9,907	12,341	14,904	18,000	17,889	20,463	19,618	19,963	21,760	22,732	24,602	26,122	29,001	32,865
Bangladesh	265	297	326	362	351	355	398	477	529	538	553	601	621	687	861	922	1,013
China	2,822	3,226	3,291	4,077	4,903	7,332	8,428	8,712	9,172	8,605	8,973	9,477	10,358	11,045	12,212	14,417	16,868
India	34	49	71	62	73	85	87	27	43	44	153	166	254	257	261	288	297
Indonesia	59	76	93	118	97	101	149	156	208	278	249	101	89	84	94	103	105
Japan	2,459	3,287	3,980	3,164	4,187	3,850	5,534	5,345	6,522	5,920	5,152	5,852	5,705	7,067	6,960	6,538	6,696

TABLE S6-5

Value added of aircraft and spacecraft industry, by region, country, or economy: 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
Malaysia	31	34	37	90	232	226	343	260	397	536	629	766	851	465	445	471	616
Pakistan	1	2	2	2	70	98	122	81	140	251	280	341	371	386	390	426	404
Philippines	47	49	55	65	69	55	85	76	60	61	73	9	88	97	112	114	124
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	2,072	2,300	2,568	3,124
South Korea	384	380	469	539	766	902	787	757	1,225	1,046	1,511	1,978	2,079	2,223	2,270	2,933	3,381
Sri Lanka	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Taiwan	218	185	146	115	70	105	138	122	142	172	176	177	189	198	195	198	210
Thailand	9	11	12	14	17	20	20	17	25	27	28	24	20	19	20	22	24
Vietnam	3	4	4	6	1	1	1	2	1	1	2	7	1	2	2	2	2
Oceania	911	1,151	1,393	1,492	1,565	1,699	1,340	1,455	1,926	2,377	2,265	1,909	1,892	1,633	1,712	2,511	2,603
Australia	706	887	1,082	1,160	1,269	1,319	1,043	1,129	1,540	1,999	1,913	1,528	1,521	1,255	1,352	2,086	2,143
New Zealand	204	265	311	333	296	380	298	325	386	378	352	381	372	378	360	425	460

EU = European Union.

* = amount < \$500,000.

Note(s):

Value added is the amount contributed by a country, firm, 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 or minor discrepancies. World total does not include all countries and economies due to limitations in data availability. See Table S6-1 for a full list of countries and economies in each region.

Source(s):

IHS Markit, special tabulations (2019) of Comparative Industry Service.

TABLE S6-6

Value added of pharmaceutical industry, by region, country, or economy: 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
World	258,382	294,195	312,700	335,731	361,817	392,201	427,587	452,454	455,167	490,050	485,996	497,695	513,337	545,098	580,242	605,818	698,739
North America	94,450	101,846	105,114	114,180	124,940	128,696	132,459	151,600	139,213	137,763	132,135	140,712	147,839	155,472	161,118	169,593	191,633
Canada	2,944	3,598	3,523	3,725	4,985	4,450	4,176	4,116	4,540	4,284	4,694	3,801	4,474	4,847	5,009	5,128	5,309
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	3,832	4,173	4,524
United States	88,008	94,781	98,116	106,725	115,879	119,965	123,893	143,871	130,929	129,902	123,283	132,590	139,086	146,472	152,277	160,291	181,800
Central and South America	4,544	4,790	5,733	7,656	9,355	11,376	12,811	12,501	14,684	15,820	15,187	14,794	14,623	12,318	12,451	14,444	14,757
Argentina	188	264	329	417	506	623	830	893	1,078	1,197	1,252	1,252	1,048	1,074	1,154	1,260	1,052
Bolivia	41	46	45	54	49	47	75	93	88	95	99	109	117	123	146	154	174
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	7,700	9,322	9,394
Chile	169	162	208	260	283	329	292	324	419	437	437	461	673	748	671	655	725
Colombia	552	515	707	724	810	966	1,189	1,153	1,373	1,490	1,659	1,680	1,611	1,406	1,655	1,805	2,026
Costa Rica	50	53	58	58	65	74	80	70	85	95	102	112	107	109	117	123	131
Ecuador	83	48	50	59	67	70	84	92	117	90	178	183	105	123	135	131	141
Honduras	33	34	30	36	36	39	44	44	41	53	60	59	61	60	67	73	79
Jamaica	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Panama	11	11	11	12	13	17	19	21	22	23	36	38	34	38	42	44	49
Peru	225	189	177	210	245	297	383	401	422	446	482	434	389	290	321	314	347
Uruguay	38	44	59	71	77	89	145	144	161	176	211	235	255	269	328	325	349
Venezuela	153	142	189	232	275	340	522	608	365	450	538	509	418	819	114	239	289
Europe	93,874	114,006	122,324	128,926	137,966	156,261	173,967	167,392	167,752	177,827	167,118	173,293	175,291	182,989	194,323	194,368	227,682
EU	82,452	99,573	104,950	109,958	116,802	131,697	145,689	140,518	138,124	145,074	134,292	138,492	140,593	151,805	158,083	155,720	183,542
Austria	1,053	1,361	1,384	1,848	1,888	2,477	2,152	2,394	2,378	2,606	2,536	2,625	2,844	2,345	2,377	2,460	2,719
Belgium	3,637	4,464	4,854	5,586	5,298	6,435	7,279	6,614	7,690	6,932	6,947	8,055	8,103	6,564	7,385	7,842	10,423
Bulgaria	55	77	91	105	118	171	98	154	146	207	162	177	166	194	206	251	306
Czechia	325	409	477	602	663	721	818	782	852	895	837	842	894	720	775	855	1,022
Denmark	2,267	3,177	3,498	3,706	3,615	3,757	4,509	4,799	6,087	6,712	7,704	8,642	9,876	9,623	10,788	10,677	12,042
Finland	527	601	737	846	951	1,095	1,270	1,276	1,302	1,428	1,582	1,531	1,747	1,458	1,638	1,652	1,885
France	10,924	13,930	14,800	15,494	17,255	18,144	18,287	16,698	15,713	16,751	15,189	15,986	15,365	13,146	12,445	12,450	14,568
Germany	12,649	16,995	19,875	22,355	23,835	27,328	31,824	29,056	27,612	30,021	28,780	29,914	31,819	25,465	27,867	29,335	38,077
Greece	661	852	834	973	927	910	849	852	826	731	583	793	683	573	564	657	846
Hungary	744	1,024	1,198	1,319	1,456	1,582	1,701	1,550	1,840	1,973	1,860	1,718	1,808	1,622	1,568	1,777	1,947
Ireland	16,398	16,005	15,536	15,333	14,976	17,251	17,763	20,877	19,584	20,697	15,807	15,997	18,039	43,480	45,357	41,402	47,960
Italy	7,888	9,585	10,267	9,735	9,827	10,820	12,137	11,181	11,073	11,883	10,895	11,446	7,958	9,630	10,116	10,632	12,118
Netherlands	3,002	3,290	3,426	3,129	3,059	3,709	4,036	3,967	3,652	3,712	3,776	2,160	1,957	2,025	1,989	2,027	2,253
Poland	548	537	580	772	832	1,513	1,872	1,620	1,607	1,476	1,530	1,597	1,836	1,523	1,674	1,817	1,568
Portugal	364	411	463	482	460	599	644	650	567	596	577	647	602	560	614	637	741

TABLE S6-6

Value added of pharmaceutical industry, by region, country, or economy: 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
Romania	83	97	102	155	177	247	319	274	395	381	328	378	388	326	330	436	526
Slovakia	70	73	61	81	99	122	165	210	227	237	224	39	109	76	88	82	117
Spain	3,893	4,980	5,906	6,465	7,200	8,531	9,880	8,885	6,777	6,471	6,269	7,672	8,743	7,393	8,028	8,327	9,381
Sweden	4,784	5,714	5,861	6,210	6,790	6,788	6,896	7,796	8,109	8,987	8,388	8,547	7,539	6,709	6,935	6,897	7,446
United Kingdom	12,579	15,993	15,001	14,762	17,375	19,497	23,191	20,881	21,688	22,381	20,317	19,726	20,117	18,371	17,338	15,508	17,595
Other Europe	11,422	14,432	17,373	18,967	21,164	24,565	28,278	26,874	29,628	32,753	32,826	34,801	34,698	31,183	36,240	38,649	44,140
Norway	587	782	893	953	1,080	1,182	1,182	905	898	758	875	861	741	917	1,284	1,328	1,431
Russia	839	972	1,223	1,485	1,810	2,343	2,695	2,124	2,434	2,601	3,067	3,640	3,265	1,556	1,566	1,993	2,576
Switzerland	9,508	11,856	14,225	15,086	16,648	18,941	21,836	21,789	23,745	27,175	26,743	28,154	28,586	26,749	31,194	32,562	37,220
Turkey	301	600	722	1,033	1,142	1,526	1,937	1,703	2,018	1,615	1,453	1,428	1,431	1,573	1,660	2,030	2,049
Ukraine	187	224	310	410	483	573	629	353	533	603	688	719	675	388	536	735	863
Middle East	2,550	2,805	3,330	3,567	4,006	4,514	4,729	4,777	5,849	5,714	5,682	5,263	5,156	5,405	5,823	5,804	5,528
Bahrain	*	*	*	*	*	*	1	*	1	1	1	1	1	1	1	1	1
Iran	255	363	389	422	508	659	842	1,108	1,256	1,188	947	668	803	670	805	913	679
Israel	1,859	1,958	2,385	2,491	2,716	2,887	2,805	2,692	3,551	3,407	3,441	3,230	2,795	3,206	3,256	3,085	2,735
Jordan	250	273	305	355	432	526	566	531	522	524	579	618	800	815	955	1,067	1,135
Kuwait	32	41	55	61	45	60	72	71	89	125	185	187	161	91	111	130	162
Qatar	5	4	3	4	5	4	3	4	4	4	4	4	4	2	2	2	2
Saudi Arabia	52	57	66	76	88	137	159	163	196	209	250	272	289	310	338	346	369
United Arab Emirates	97	109	127	157	212	242	282	208	229	257	275	284	303	311	356	261	444
Africa	794	869	1,103	1,251	1,347	1,559	1,814	1,917	2,299	2,322	2,425	2,605	2,584	2,613	2,827	2,938	3,456
Cameroon	4	4	6	6	6	7	12	12	12	14	14	15	17	15	17	20	24
Egypt	356	292	382	444	489	607	769	846	1,012	921	922	983	856	951	1,000	1,090	1,429
Kenya	14	19	23	24	16	15	19	18	25	21	26	17	36	39	45	44	50
Morocco	91	106	99	109	107	118	136	134	146	144	137	153	169	142	156	176	201
Nigeria	67	74	89	117	158	185	231	216	272	380	429	539	621	540	570	575	655
Senegal	8	10	14	14	16	17	17	20	20	22	24	16	18	27	30	30	36
South Africa	236	342	465	509	533	581	596	635	775	778	826	831	816	856	961	948	1,004
Tunisia	19	22	24	27	23	29	33	36	37	43	48	51	50	42	48	55	55
Zimbabwe	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Asia	60,537	68,071	73,105	77,950	81,713	87,217	99,500	111,856	122,240	146,878	159,655	157,227	164,461	183,494	200,872	215,479	252,302
Bangladesh	124	142	154	183	217	251	294	414	422	430	432	537	658	735	919	1,272	1,800
China	14,455	16,153	16,114	19,623	22,313	28,014	37,449	41,293	47,292	58,640	73,240	84,256	95,100	106,661	116,762	134,593	162,527
India	3,039	3,438	4,306	5,075	5,614	7,365	8,063	7,915	9,534	13,724	11,487	12,345	13,291	16,259	19,200	21,469	24,417
Indonesia	1,840	2,137	1,682	2,008	2,026	2,796	3,603	3,427	4,184	3,531	1,469	1,141	1,216	1,362	1,574	1,755	1,859
Japan	34,789	38,933	40,865	40,528	37,749	33,353	37,536	45,875	46,521	52,704	52,821	41,957	36,310	39,974	42,824	36,308	38,772

TABLE S6-6

Value added of pharmaceutical industry, by region, country, or economy: 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
Malaysia	87	99	108	142	180	178	223	212	275	299	323	376	429	374	379	416	494
Pakistan	322	433	615	734	650	741	845	696	825	1,038	1,066	1,072	1,147	1,139	1,204	1,335	1,313
Philippines	151	185	210	236	331	285	236	386	471	430	392	706	556	765	759	906	691
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	7,999	6,838	8,034
South Korea	2,131	2,294	2,719	3,438	3,813	4,210	3,855	3,560	4,342	4,672	4,747	5,203	5,690	6,053	6,450	7,538	8,849
Sri Lanka	3	4	4	4	3	5	7	8	9	12	13	18	32	30	32	34	31
Taiwan	577	670	708	791	898	936	970	1,049	1,201	1,303	1,344	1,392	1,305	1,327	1,438	1,535	1,680
Thailand	91	109	123	138	170	202	226	260	340	366	431	407	488	563	568	635	796
Vietnam	208	201	269	273	290	375	480	526	621	430	500	598	735	676	763	845	1,040
Oceania	1,633	1,808	1,992	2,203	2,489	2,577	2,306	2,411	3,129	3,725	3,794	3,801	3,383	2,808	2,829	3,191	3,382
Australia	1,564	1,737	1,912	2,110	2,401	2,478	2,230	2,330	3,023	3,592	3,628	3,556	3,199	2,630	2,644	2,988	3,173
New Zealand	69	71	80	93	88	98	76	81	106	133	166	244	183	179	185	204	208

EU = European Union.

* = amount < \$500,000.

Note(s):

Value added is the amount contributed by a country, firm, 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 or minor discrepancies. World total does not include all countries and economies due to limitations in data availability. See Table S6-1 for a full list of countries and economies in each region.

Source(s):

IHS Markit, special tabulations (2019) of Comparative Industry Service.

Science and Engineering Indicators

TABLE S6-7

Value added of computer, electronic, and optical products industry, by region, country, or economy: 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
World	539,048	614,441	689,386	723,319	778,687	842,427	868,516	780,860	899,269	954,827	959,164	991,876	1,045,364	1,037,998	1,042,180	1,106,974	1,185,851
North America	196,013	213,693	220,536	232,194	247,289	252,599	254,331	242,416	260,320	258,567	262,973	265,916	274,677	292,203	293,145	305,285	324,521
Canada	4,007	4,980	5,778	6,491	6,857	7,317	7,085	6,716	7,726	7,691	6,729	5,896	5,646	4,937	4,289	4,013	4,212
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	17,982	16,580	17,408	17,568
United States	172,478	192,190	200,258	210,314	223,779	228,490	231,810	224,819	240,295	238,357	242,564	246,197	252,342	269,284	272,276	283,864	302,270
Central and South America	5,212	4,303	6,000	6,959	8,890	9,898	12,300	9,773	12,955	14,196	13,855	14,382	12,895	9,216	8,525	10,337	9,345
Argentina	100	158	239	314	364	449	535	491	646	710	685	651	532	499	489	579	463
Bolivia	4	4	4	4	4	5	5	6	6	6	6	7	7	7	8	9	9
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	7,017	8,635	7,746
Chile	1	1	1	1	1	1	1	1	1	1	1	2	5	5	4	4	5
Colombia	97	94	121	108	117	150	125	143	158	178	183	199	172	135	127	140	140
Costa Rica	95	91	103	113	126	144	156	137	166	187	200	203	203	206	211	216	211
Ecuador	177	187	185	202	196	284	297	404	410	278	533	435	409	357	374	344	343
Honduras	51	52	55	60	65	69	75	79	77	94	104	95	101	99	105	108	109
Jamaica	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Panama	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Peru	20	12	14	15	28	36	49	38	45	43	64	71	67	61	53	51	50
Uruguay	2	1	2	5	6	6	9	9	11	11	20	20	25	24	24	23	23
Venezuela	149	137	183	226	267	330	507	591	355	437	523	494	406	796	111	229	247
Europe	103,962	121,224	145,132	150,920	159,592	183,620	188,173	148,277	158,032	174,954	161,054	168,542	172,493	150,226	146,150	139,433	148,754
EU	91,092	105,459	126,577	129,999	136,473	155,785	154,926	122,253	128,403	136,819	122,866	128,826	132,977	118,361	118,820	112,173	119,712
Austria	2,837	3,308	3,813	4,239	4,677	3,552	3,655	3,197	3,063	3,784	3,534	3,849	3,863	3,281	3,496	3,419	3,842
Belgium	1,682	1,946	2,033	2,048	2,193	2,560	2,419	1,343	1,430	1,628	1,572	1,593	1,643	1,387	1,486	1,407	1,469
Bulgaria	62	82	66	83	92	134	140	134	136	166	150	176	208	206	224	293	343
Czechia	705	1,075	1,241	1,481	1,889	2,465	2,746	2,206	2,461	2,661	2,951	2,773	2,861	2,518	2,769	2,819	3,122
Denmark	1,818	2,276	2,370	2,321	2,639	3,104	2,814	2,494	2,624	2,867	2,677	2,822	2,533	2,389	2,456	2,437	2,756
Finland	8,167	10,026	10,962	11,439	12,286	15,320	15,490	9,522	8,742	7,510	3,383	5,258	5,550	4,305	4,177	4,162	4,325
France	14,318	15,868	17,417	16,135	16,187	17,656	17,649	14,703	14,851	15,068	13,775	14,447	14,383	12,651	13,393	12,899	13,296
Germany	25,498	32,135	38,486	38,538	40,429	50,712	48,625	35,499	40,403	45,631	41,316	43,621	45,953	43,045	43,652	42,053	44,768
Greece	443	511	318	447	360	414	426	318	396	291	271	227	244	264	207	206	226
Hungary	991	1,646	2,258	2,623	2,503	2,178	2,452	2,041	2,029	2,712	2,018	2,230	2,113	1,920	1,956	1,943	2,078
Ireland	4,234	4,613	5,640	5,826	6,052	5,280	4,565	4,803	4,193	4,435	4,273	3,962	4,199	10,621	10,298	9,150	10,148
Italy	7,367	8,621	9,961	10,197	10,510	11,895	12,071	10,304	10,812	11,909	10,717	10,530	10,586	9,189	9,626	8,843	9,266
Netherlands	3,544	3,695	4,361	6,070	6,516	7,379	6,842	6,116	5,897	5,683	5,010	5,106	5,147	4,790	4,263	3,894	3,944
Poland	836	1,076	1,169	1,399	1,663	1,713	2,418	2,822	2,259	2,185	2,010	1,856	2,231	1,805	1,732	1,581	1,638
Portugal	596	715	823	874	899	1,076	1,019	623	763	628	513	540	536	464	506	522	571

TABLE S6-7

Value added of computer, electronic, and optical products industry, by region, country, or economy: 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
Romania	160	214	279	238	344	533	544	276	292	214	246	262	469	395	480	638	697
Slovakia	139	186	255	350	615	711	1,094	687	907	983	826	770	881	637	679	624	658
Spain	2,614	3,137	3,330	3,651	3,887	4,948	5,664	4,957	4,415	4,695	4,250	4,336	3,993	3,364	3,349	3,007	3,257
Sweden	4,636	6,427	10,058	9,508	10,498	11,336	11,448	9,227	11,032	11,932	10,819	12,248	12,382	3,268	3,342	2,921	2,680
United Kingdom	10,446	7,901	11,738	12,531	12,234	12,820	12,846	10,981	11,697	11,836	12,556	12,219	13,201	11,862	10,727	9,353	10,628
Other Europe	12,870	15,765	18,556	20,921	23,120	27,835	33,247	26,025	29,629	38,135	38,188	39,716	39,516	31,865	27,330	27,260	29,042
Norway	1,004	1,281	1,212	1,326	1,293	1,718	1,761	1,459	1,523	1,631	1,631	1,682	1,677	1,418	1,274	1,373	1,404
Russia	1,944	2,607	3,876	4,713	5,648	7,671	9,196	5,845	7,358	9,170	9,486	10,333	9,651	4,457	4,326	4,757	4,651
Switzerland	9,223	10,863	12,312	13,603	14,987	17,095	20,822	17,940	19,410	25,757	25,465	26,084	26,485	24,783	20,343	19,379	21,244
Turkey	379	584	696	788	598	577	549	356	745	913	990	1,031	1,033	1,011	1,085	1,345	1,274
Ukraine	319	430	460	491	594	774	919	424	593	663	615	586	671	196	302	407	469
Middle East	5,227	5,271	5,621	5,715	6,119	7,133	7,702	8,236	8,393	8,621	10,280	9,469	10,152	9,043	8,946	9,542	10,335
Bahrain	18	19	21	28	37	48	61	49	56	65	69	73	76	63	72	74	75
Iran	243	265	380	328	316	375	382	685	632	597	476	336	404	337	395	446	318
Israel	4,832	4,832	5,031	5,143	5,564	6,460	6,964	7,220	7,372	7,590	9,330	8,644	9,267	8,340	8,154	8,688	9,583
Jordan	26	24	28	28	35	41	51	53	50	44	49	52	56	30	19	16	15
Kuwait	70	88	118	132	97	130	156	152	193	221	228	223	198	112	126	139	161
Qatar	5	5	*	5	7	10	8	8	10	14	17	17	18	28	26	29	32
Saudi Arabia	20	22	26	30	34	36	41	40	48	56	69	86	95	91	92	90	92
United Arab Emirates	13	15	17	22	29	33	39	29	32	34	41	39	39	42	62	61	59
Africa	1,070	1,347	1,636	1,926	2,063	2,149	2,246	2,259	2,622	2,942	3,526	3,573	3,849	3,345	3,344	3,219	3,345
Cameroon	*	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Egypt	48	39	51	60	66	82	103	114	136	72	470	113	51	53	70	98	129
Kenya	15	19	24	28	27	40	46	47	47	51	72	74	46	37	39	37	39
Morocco	371	448	532	697	741	680	629	683	765	728	671	700	739	618	652	728	737
Nigeria	252	277	334	440	591	692	864	811	1,018	1,423	1,607	2,018	2,324	2,023	1,916	1,716	1,849
Senegal	*	*	1	1	1	1	1	1	3	3	3	3	3	3	3	3	3
South Africa	379	557	687	690	626	641	582	583	624	638	676	639	657	585	636	606	559
Tunisia	5	6	7	8	10	14	21	20	28	27	27	25	27	25	26	29	27
Zimbabwe	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Asia	225,898	266,337	307,977	322,810	351,723	383,477	400,236	366,886	453,227	490,818	502,423	525,341	567,321	569,433	577,536	633,918	684,357
Bangladesh	137	135	131	129	127	120	131	158	176	174	176	192	228	283	427	370	385
China	48,310	61,909	71,714	82,829	99,401	111,364	132,855	130,017	157,805	186,549	210,508	237,627	262,826	280,684	288,048	322,975	364,229
India	2,480	2,882	2,985	3,653	4,051	4,743	4,257	4,390	4,838	4,327	3,955	4,200	3,869	3,891	3,698	3,992	4,157
Indonesia	1,047	1,317	1,310	1,135	1,746	2,665	3,035	2,894	2,725	2,826	3,035	3,868	3,354	3,239	3,331	3,256	2,524
Japan	95,171	110,672	122,184	116,685	113,142	117,878	119,311	103,820	124,797	120,759	103,279	84,199	81,303	75,802	81,444	71,250	74,084

TABLE S6-7

Value added of computer, electronic, and optical products industry, by region, country, or economy: 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
Malaysia	7,571	8,822	10,074	9,217	9,833	11,284	10,777	7,587	10,118	11,799	13,481	14,177	14,874	13,390	13,283	14,322	15,492
Pakistan	195	263	373	445	157	179	204	168	200	251	258	259	278	276	280	307	286
Philippines	2,423	1,955	2,300	2,466	2,912	4,329	2,942	3,381	3,089	3,613	4,204	2,583	2,588	2,601	2,421	2,480	2,617
Singapore	7,401	7,339	9,182	10,703	12,016	11,724	11,507	10,397	16,507	15,303	15,132	15,499	15,786	15,433	12,921	19,998	20,776
South Korea	30,709	34,143	45,730	49,950	55,765	63,091	55,783	51,105	67,505	75,119	75,392	82,977	85,086	81,421	76,664	87,653	91,521
Sri Lanka	22	22	27	33	9	23	22	21	17	18	19	22	21	20	20	22	21
Taiwan	26,342	32,057	36,850	40,036	46,586	48,835	51,571	45,252	55,600	60,492	62,864	67,529	77,895	75,783	76,754	85,029	85,287
Thailand	3,879	4,582	4,851	5,222	5,600	6,737	7,232	7,017	8,821	7,864	7,138	7,438	7,518	6,175	6,052	5,832	5,924
Vietnam	212	240	266	306	376	505	607	678	1,029	1,723	2,982	4,772	11,695	10,433	12,191	16,432	17,054
Oceania	1,667	2,266	2,485	2,796	3,011	3,551	3,528	3,013	3,720	4,728	5,053	4,652	3,977	4,532	4,534	5,240	5,194
Australia	1,548	2,098	2,277	2,561	2,791	3,205	3,199	2,701	3,317	4,309	4,628	4,251	3,537	4,156	4,171	4,814	4,787
New Zealand	119	168	207	235	220	346	329	312	403	419	425	401	440	376	363	427	406

EU = European Union.

* = amount < \$500,000.

Note(s):

Value added is the amount contributed by a country, firm, 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 or minor discrepancies. World total does not include all countries and economies due to limitations in data availability. See Table S6-1 for a full list of countries and economies in each region.

Source(s):

IHS Markit, special tabulations (2019) of Comparative Industry Service.

Science and Engineering Indicators

TABLE S6-8

Value added of scientific R&D services industry, by region, country, or economy: 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
World	224,569	248,766	275,978	290,983	320,139	367,006	414,140	413,663	451,078	509,288	528,656	553,930	575,490	562,131	575,474	619,593	652,487
North America	89,252	91,431	94,507	95,245	101,192	106,027	117,464	117,624	119,450	123,505	125,080	126,329	130,870	141,518	145,709	151,072	155,251
Canada	2,120	2,560	2,946	3,370	3,906	4,473	4,660	4,471	4,832	5,556	5,356	5,553	5,307	4,539	3,960	3,798	3,992
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	1,310	1,370
United States	86,015	87,619	90,340	90,487	95,917	100,077	111,254	111,752	112,902	116,192	118,019	119,465	124,130	135,644	140,526	145,964	149,780
Central and South America	7,645	7,520	9,146	10,525	12,464	15,509	18,451	19,685	22,432	26,742	30,081	31,854	30,911	31,160	27,284	31,430	30,916
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	7,689	9,147	7,426
Bolivia	70	68	69	68	73	82	96	111	120	132	152	168	179	196	215	231	248
Brazil	316	280	375	554	790	1,199	1,436	1,477	1,725	2,145	2,171	1,920	2,091	1,615	1,626	2,044	1,871
Chile	1,597	1,580	2,146	2,176	2,805	3,320	3,757	4,061	4,779	5,994	6,853	7,431	6,900	6,387	6,361	7,044	7,646
Colombia	1,456	1,386	1,707	2,160	2,372	3,067	3,536	3,620	4,462	4,983	5,625	5,875	6,197	4,822	4,537	5,020	5,317
Costa Rica	201	210	233	263	310	382	453	498	606	702	826	927	1,036	1,265	1,334	1,380	1,421
Ecuador	437	490	521	568	632	739	837	857	996	1,170	1,313	1,519	1,613	1,605	1,494	1,565	1,647
Honduras	46	51	56	59	57	61	65	82	95	83	83	87	85	76	77	82	87
Jamaica	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Panama	264	282	303	320	355	366	414	476	535	591	643	732	776	830	882	959	1,038
Peru	473	464	503	543	610	721	918	969	1,183	1,356	1,583	1,727	1,704	1,620	1,617	1,756	1,845
Uruguay	283	216	225	286	323	388	516	589	778	935	1,065	1,224	1,232	1,168	1,172	1,350	1,375
Venezuela	890	690	751	821	962	1,165	1,447	1,913	1,210	1,519	1,963	1,904	1,599	2,789	282	852	996
Europe	72,154	88,152	101,637	107,134	116,576	139,045	155,784	142,794	151,720	169,357	166,905	184,002	184,873	159,055	163,337	177,739	190,054
EU	62,797	76,748	87,743	91,631	97,690	113,827	124,989	115,267	117,027	125,782	121,318	132,015	138,053	123,638	126,822	135,109	147,288
Austria	323	467	524	569	470	602	921	873	820	1,041	978	1,312	1,216	1,212	1,288	1,439	1,565
Belgium	698	842	1,095	1,191	1,121	1,173	1,457	1,679	1,575	1,689	1,614	1,867	2,035	1,784	2,018	2,368	2,586
Bulgaria	24	29	39	52	83	154	250	340	588	627	658	652	641	652	661	582	641
Czechia	560	567	627	669	694	886	1,088	1,008	953	1,161	1,141	1,190	1,313	1,283	1,404	1,596	1,749
Denmark	691	945	957	1,078	1,137	1,290	2,310	2,400	2,299	1,780	1,404	1,758	2,234	2,235	2,816	3,026	3,116
Finland	984	1,272	1,443	1,513	1,579	1,488	1,954	1,911	1,885	2,136	2,083	2,239	2,131	1,766	1,717	1,820	1,957
France	22,239	26,941	30,464	30,836	32,343	36,945	40,835	40,286	39,968	43,231	40,891	43,872	44,988	37,799	38,600	41,993	45,462
Germany	11,917	14,967	17,125	17,223	17,435	20,124	22,178	22,044	21,444	23,255	22,976	24,919	26,284	23,963	23,832	25,609	28,056
Greece	364	396	481	564	607	821	539	539	630	579	775	765	690	594	582	620	676
Hungary	369	488	605	717	741	837	931	793	868	972	890	987	1,097	983	1,090	1,224	1,359
Ireland	98	171	428	579	587	869	762	559	795	617	518	978	1,385	2,113	2,749	2,815	3,566
Italy	5,996	7,571	8,585	9,051	9,909	11,181	12,146	11,355	11,235	11,618	11,012	11,553	11,491	9,604	9,596	10,434	11,044
Netherlands	1,748	2,186	2,493	2,543	2,754	3,062	3,398	3,424	3,345	3,336	3,057	3,489	3,557	3,118	3,263	3,526	3,906
Poland	785	807	905	1,140	1,301	1,876	2,302	1,906	2,151	2,389	2,375	2,215	2,652	2,280	2,335	2,800	3,026
Portugal	165	205	253	280	369	484	610	615	600	595	593	681	813	640	654	737	804

TABLE S6-8

Value added of scientific R&D services industry, by region, country, or economy: 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
Romania	230	389	453	662	1,292	1,845	2,805	2,511	2,392	3,303	3,145	5,004	4,999	4,974	5,161	5,060	5,686
Slovakia	87	88	155	156	168	203	231	199	199	222	199	268	246	227	288	293	325
Spain	1,856	2,498	2,925	3,271	3,633	4,255	4,993	5,007	5,058	5,584	5,339	5,619	5,868	5,268	5,298	5,490	6,305
Sweden	3,153	4,325	6,071	6,384	6,824	8,559	7,179	5,458	7,447	8,057	7,857	9,521	9,543	8,365	8,847	10,135	10,702
United Kingdom	10,508	11,592	12,115	13,153	14,644	17,174	18,100	12,360	12,775	13,591	13,812	13,126	14,869	14,779	14,623	13,545	14,758
Other Europe	9,357	11,404	13,894	15,503	18,886	25,218	30,795	27,528	34,693	43,575	45,587	51,987	46,821	35,417	36,515	42,629	42,766
Norway	728	832	1,003	893	1,050	1,316	1,478	1,450	1,599	1,679	1,785	1,838	1,765	1,531	1,602	1,784	1,945
Russia	4,696	5,859	7,080	7,993	10,571	14,597	18,243	14,924	20,873	28,714	29,394	34,574	29,851	19,250	18,400	22,471	23,046
Switzerland	2,392	2,732	3,172	3,229	3,264	3,645	4,125	4,756	4,921	5,544	5,699	5,931	6,271	6,174	8,184	8,948	9,228
Turkey	1,268	1,669	2,206	2,800	3,249	4,432	5,370	5,106	6,057	6,257	6,801	7,456	7,470	7,516	7,331	8,306	7,259
Ukraine	274	312	433	587	752	1,228	1,579	1,293	1,243	1,380	1,908	2,188	1,463	947	997	1,120	1,289
Middle East	7,560	8,469	9,662	10,642	12,781	16,233	19,112	20,530	22,743	26,230	24,700	25,044	27,370	27,999	29,629	31,658	30,354
Bahrain	99	106	121	140	157	181	196	204	225	212	226	235	255	265	281	299	332
Iran	2,027	2,453	2,972	3,545	4,510	6,202	7,438	8,323	9,381	10,796	8,384	6,477	7,392	7,688	8,281	8,768	6,309
Israel	2,977	3,204	3,362	3,358	3,837	4,376	5,229	5,852	6,676	8,079	7,899	9,100	9,657	9,417	9,982	11,184	11,689
Jordan	157	165	177	180	185	197	187	212	234	256	279	301	325	341	360	382	408
Kuwait	68	76	81	89	93	101	108	99	111	195	199	205	217	221	224	236	281
Qatar	50	52	100	124	307	466	577	612	595	806	945	1,115	1,205	1,336	1,467	1,304	1,436
Saudi Arabia	867	903	1,009	1,104	1,218	1,347	1,536	1,823	2,006	2,171	2,677	3,097	3,345	3,454	3,551	3,735	4,005
United Arab Emirates	1,316	1,512	1,840	2,102	2,473	3,362	3,842	3,405	3,514	3,715	4,092	4,514	4,974	5,276	5,483	5,750	5,895
Africa	3,973	5,059	6,090	7,095	8,609	9,639	10,241	10,365	12,058	14,933	15,843	16,499	17,765	16,581	15,257	14,630	16,017
Cameroon	142	178	203	221	245	272	311	326	331	374	376	419	433	379	417	432	480
Egypt	275	221	211	295	362	432	505	608	691	1,738	2,303	2,295	2,469	2,611	2,318	1,652	2,071
Kenya	66	75	75	86	103	129	145	149	154	146	178	198	208	199	210	220	238
Morocco	471	597	697	779	872	1,069	1,173	1,295	1,282	1,420	1,416	1,512	1,556	1,376	1,426	1,525	1,657
Nigeria	1,427	1,605	1,953	2,377	3,503	3,874	4,340	3,571	4,076	5,129	6,118	6,938	7,964	7,455	6,512	5,692	6,189
Senegal	107	133	154	163	180	222	267	265	265	298	285	311	321	214	282	317	349
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	3,684	3,425	4,131	4,359
Tunisia	305	366	403	415	463	522	579	615	622	682	654	709	731	664	667	662	674
Zimbabwe	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Asia	38,031	40,341	45,250	49,241	55,933	64,885	75,969	85,413	100,713	121,758	137,298	143,477	158,405	164,254	170,064	185,349	201,388
Bangladesh	511	542	569	567	676	736	811	953	1,039	1,070	1,115	1,354	1,580	1,811	2,139	2,445	2,620
China	7,817	7,762	9,274	12,442	15,783	20,846	26,842	34,528	41,316	54,005	66,628	73,081	82,649	89,417	88,537	98,644	111,223
India	2,369	2,789	3,661	4,413	5,168	6,793	8,050	9,143	11,801	13,840	14,860	17,272	20,522	21,865	24,444	27,404	29,151
Indonesia	659	852	951	1,078	1,378	1,553	1,739	1,914	2,578	3,071	3,179	3,165	3,155	3,176	3,558	4,006	4,177
Japan	18,204	18,958	19,984	17,704	16,813	16,377	18,838	19,438	20,873	23,154	22,232	17,298	16,432	14,279	16,195	16,118	16,413

TABLE S6-8

Value added of scientific R&D services industry, by region, country, or economy: 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
Malaysia	444	482	524	726	802	966	1,123	1,202	1,498	1,712	1,899	2,072	2,184	1,982	2,043	2,089	2,342
Pakistan	594	671	755	999	1,948	2,167	2,212	2,380	2,725	3,262	3,613	3,832	4,524	4,953	5,429	6,021	5,603
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	3,358	3,474	3,570
Singapore	699	737	782	872	1,038	1,283	1,629	1,690	2,185	2,689	2,904	3,157	3,300	3,142	3,265	3,407	3,594
South Korea	2,948	3,350	3,982	4,948	5,895	6,728	6,417	5,948	7,146	8,075	8,802	9,961	11,816	11,647	11,936	11,876	12,314
Sri Lanka	125	131	127	148	182	219	242	264	290	351	393	407	408	402	367	402	403
Taiwan	1,965	2,189	2,474	2,880	3,338	3,639	3,940	3,906	4,428	5,005	5,154	5,280	5,325	5,159	5,196	5,520	5,694
Thailand	776	910	1,105	1,261	1,480	1,822	1,997	1,780	2,214	2,518	3,020	3,156	2,967	2,736	2,629	2,919	3,219
Vietnam	209	228	257	282	313	365	461	506	544	614	712	816	874	909	967	1,023	1,066
Oceania	5,954	7,794	9,685	11,100	12,586	15,668	17,118	17,252	21,962	26,762	28,749	26,724	25,295	21,563	24,195	27,715	28,507
Australia	5,913	7,742	9,625	11,032	12,516	15,564	16,940	17,115	21,896	26,650	28,583	26,543	25,175	21,482	24,104	27,616	28,404
New Zealand	41	51	60	68	70	104	178	137	66	112	166	181	120	81	91	100	102

EU = European Union.

Note(s):

Value added is the amount contributed by a country, firm, 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 or minor discrepancies. World total does not include all countries and economies due to limitations in data availability. See Table S6-1 for a full list of countries and economies in each region.

Source(s):

IHS Markit, special tabulations (2019) of Comparative Industry Service.

Science and Engineering Indicators

TABLE S6-9

Value added of publishing industry (including software), by region, country, or economy: 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
World	237,838	261,470	293,306	310,900	305,854	351,381	360,681	334,316	348,201	367,978	366,341	373,055	381,912	376,778	398,177	430,968	461,559
North America	142,479	151,700	167,826	181,052	171,711	202,336	199,805	187,510	196,842	205,310	212,504	221,376	226,467	233,849	255,928	276,430	297,200
Canada	4,469	5,123	6,234	7,302	8,318	9,389	9,416	7,956	8,836	9,400	9,825	9,781	9,685	8,024	7,899	8,431	8,564
Mexico	1,079	982	1,003	1,100	1,162	1,275	1,344	1,098	1,220	1,328	1,324	1,406	1,418	1,282	1,156	1,140	1,250
United States	136,930	145,595	160,589	172,650	162,231	191,672	189,045	178,456	186,786	194,582	201,354	210,189	215,364	224,544	246,873	266,859	287,386
Central and South America	2,452	2,725	3,383	4,268	4,837	5,960	7,506	7,168	7,872	8,808	7,806	6,884	6,576	5,376	4,186	4,721	4,367
Argentina	139	196	254	304	340	405	497	491	573	647	698	667	649	765	650	757	595
Bolivia	18	16	17	19	23	25	30	32	35	41	44	48	49	55	61	65	69
Brazil	1,503	1,794	2,278	2,920	3,291	4,092	5,180	4,884	5,539	6,136	5,077	4,280	4,184	2,637	2,277	2,494	2,246
Chile	176	106	125	158	200	221	260	289	295	286	281	299	246	243	234	237	249
Colombia	198	176	183	260	297	391	500	411	487	590	515	444	395	310	285	300	308
Costa Rica	24	25	28	29	36	43	47	42	55	64	68	71	78	88	93	96	100
Ecuador	33	40	49	56	50	81	76	86	91	89	99	88	85	80	78	80	82
Honduras	23	26	28	28	30	30	34	39	34	41	43	41	42	43	42	42	38
Jamaica	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Panama	36	36	43	43	46	61	69	78	79	81	90	97	98	106	108	113	120
Peru	99	130	145	159	181	189	217	215	251	296	263	247	213	195	192	220	231
Uruguay	39	28	31	41	52	60	77	74	87	100	104	107	103	97	92	101	93
Venezuela	164	151	201	249	292	362	518	527	344	438	525	496	435	757	74	216	236
Europe	62,987	73,663	84,477	86,965	91,137	105,160	112,742	99,873	100,686	107,037	101,006	103,207	105,898	98,506	97,758	108,276	117,093
EU	59,160	69,114	78,879	80,373	83,965	96,297	102,762	92,138	92,485	98,083	91,955	94,034	97,502	92,063	91,691	101,652	110,192
Austria	801	927	1,030	1,109	1,162	1,321	1,419	1,218	1,242	1,375	1,306	1,494	1,438	1,252	1,292	1,332	1,433
Belgium	869	1,112	1,275	1,296	1,344	1,559	1,706	1,736	1,631	1,648	1,418	1,463	1,564	1,290	1,272	1,251	1,375
Bulgaria	24	31	41	42	57	73	118	108	98	125	118	140	146	128	161	158	179
Czechia	310	341	406	538	621	716	867	796	738	758	818	844	936	874	871	1,136	1,292
Denmark	1,305	1,604	1,719	1,829	1,847	2,072	2,446	2,130	2,136	2,223	1,852	2,016	2,208	2,370	2,152	2,253	2,378
Finland	936	1,196	1,427	1,406	1,435	1,796	2,129	2,179	2,086	2,138	1,948	1,945	1,867	1,494	1,562	1,620	1,724
France	9,956	11,888	13,431	13,681	14,548	16,161	17,502	15,796	15,556	16,702	15,673	16,279	16,983	14,721	15,184	15,783	16,761
Germany	9,977	11,770	13,268	13,513	14,098	17,041	20,193	17,838	17,689	20,249	18,914	19,329	19,188	15,864	16,119	16,579	17,462
Greece	611	889	1,378	1,240	1,398	1,523	1,317	1,598	1,352	948	834	783	774	558	468	422	438
Hungary	316	343	447	502	569	707	736	548	537	580	514	586	526	428	478	578	649
Ireland	2,651	3,213	4,334	4,170	4,621	6,195	6,897	7,751	8,722	10,431	10,556	11,793	13,537	12,805	14,407	19,048	21,983
Italy	4,605	5,085	5,685	5,819	5,967	6,670	6,927	6,041	6,267	5,703	4,276	4,148	4,138	3,240	3,389	3,567	3,673
Netherlands	2,797	3,345	3,761	3,646	3,774	4,350	4,693	4,427	4,205	4,184	3,733	3,756	3,715	3,055	3,035	2,960	3,164
Poland	1,160	1,281	1,597	1,912	2,062	2,886	3,410	2,677	2,537	2,579	2,168	2,093	1,915	1,519	1,603	1,875	1,986
Portugal	361	449	541	556	613	685	741	718	666	595	471	480	455	362	362	381	400

TABLE S6-9

Value added of publishing industry (including software), by region, country, or economy: 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
Romania	69	123	160	196	183	198	290	268	223	227	178	211	223	175	192	213	246
Slovakia	101	148	172	206	256	296	432	403	383	363	403	295	275	245	256	256	275
Spain	3,480	4,256	4,764	5,311	5,421	5,848	6,334	5,888	5,420	5,375	4,417	4,019	3,999	3,519	3,597	3,715	3,909
Sweden	2,211	2,764	3,297	3,315	3,521	3,961	4,265	3,309	3,818	4,311	4,339	4,575	4,434	9,840	8,764	9,102	9,771
United Kingdom	16,621	18,349	20,145	20,086	20,468	22,238	20,338	16,709	17,179	17,569	18,020	17,786	19,182	18,322	16,528	19,424	21,097
Other Europe	3,827	4,550	5,598	6,593	7,172	8,863	9,980	7,735	8,201	8,954	9,051	9,173	8,396	6,443	6,067	6,624	6,900
Norway	1,809	2,235	2,567	2,850	2,977	3,584	3,639	3,378	3,647	3,866	3,695	3,816	3,562	2,818	2,622	2,740	2,885
Russia	411	621	1,168	1,795	2,300	3,261	4,092	2,333	2,362	2,614	3,067	3,024	2,470	1,367	1,265	1,531	1,569
Switzerland	1,302	1,519	1,643	1,671	1,634	1,681	1,843	1,759	1,876	2,106	1,880	1,888	1,951	1,925	1,827	1,916	1,981
Turkey	231	74	123	160	117	150	169	97	124	141	154	165	175	159	164	190	177
Ukraine	74	101	97	116	144	188	238	167	192	226	255	281	237	174	190	247	289
Middle East	866	834	789	919	1,000	1,164	1,323	1,213	1,236	1,393	1,403	1,380	1,504	1,557	1,625	1,708	1,735
Bahrain	35	38	41	55	74	95	121	96	112	129	137	144	149	154	156	157	167
Iran	134	84	50	79	90	84	98	106	116	166	128	94	106	111	122	130	93
Israel	461	446	378	449	441	507	577	520	466	486	469	443	503	541	581	632	641
Jordan	37	40	46	49	70	90	112	107	132	132	138	130	118	125	132	138	144
Kuwait	57	73	95	80	87	85	101	80	79	77	89	103	128	126	126	132	157
Qatar	8	8	17	20	22	47	31	49	42	70	83	97	101	96	94	90	99
Saudi Arabia	43	48	53	63	72	101	98	96	119	137	144	147	162	150	149	150	153
United Arab Emirates	91	96	109	124	143	154	185	159	171	197	215	222	238	254	265	279	282
Africa	341	451	570	599	694	793	775	711	856	858	898	973	1,048	884	785	769	798
Cameroon	6	2	3	4	4	4	7	7	7	8	8	8	9	7	8	8	9
Egypt	19	21	23	28	35	51	64	74	85	99	126	125	185	141	123	86	96
Kenya	19	23	21	23	28	35	24	29	29	20	20	19	16	20	22	23	24
Morocco	17	23	25	30	24	29	30	30	34	33	23	65	82	73	74	76	84
Nigeria	45	48	76	101	138	158	191	174	206	203	204	260	324	291	241	210	239
Senegal	2	2	3	3	3	3	4	3	4	4	4	4	4	3	3	3	4
South Africa	218	314	399	389	440	486	421	362	456	453	475	453	389	313	280	329	309
Tunisia	17	19	20	21	23	26	33	31	36	38	37	39	39	35	34	33	33
Zimbabwe	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Asia	24,591	26,912	30,002	30,682	30,076	28,242	29,898	29,982	32,152	35,313	34,011	31,812	33,447	30,998	32,531	33,526	34,762
Bangladesh	92	103	113	122	127	152	166	195	219	229	235	295	368	402	445	472	511
China	2,580	3,096	3,909	4,241	4,392	4,675	5,347	5,982	6,188	7,469	8,708	9,808	12,550	12,144	11,800	13,095	14,563
India	583	723	700	1,053	1,226	1,573	1,724	1,537	1,932	2,381	2,680	2,667	2,524	2,616	2,612	2,896	2,973
Indonesia	384	402	457	467	628	566	647	687	860	857	789	740	694	607	639	715	728
Japan	16,700	18,211	20,016	19,270	17,698	15,396	16,560	16,650	17,071	17,849	15,477	12,301	11,298	9,647	11,563	10,784	10,213

TABLE S6-9

Value added of publishing industry (including software), by region, country, or economy: 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
Malaysia	349	415	464	407	576	478	545	465	924	1,149	989	843	907	758	751	756	840
Pakistan	4	5	6	7	8	9	11	7	9	11	13	12	12	12	13	14	13
Philippines	95	40	39	43	46	55	7	6	6	7	7	6	11	11	14	14	4
Singapore	225	222	225	367	385	169	164	159	192	243	231	214	198	153	137	140	142
South Korea	1,764	1,707	1,869	2,307	2,650	2,827	2,246	1,961	2,210	2,356	2,273	2,358	2,364	2,263	2,224	2,231	2,384
Sri Lanka	*	*	*	*	*	*	1	1	*	*	*	*	*	*	*	*	*
Taiwan	1,744	1,907	2,112	2,295	2,232	2,217	2,336	2,193	2,397	2,613	2,466	2,419	2,378	2,241	2,194	2,253	2,222
Thailand	57	63	73	83	87	101	117	110	125	135	129	138	132	131	128	143	154
Vietnam	14	18	20	19	22	25	27	28	17	13	12	11	12	12	13	14	14
Oceania	4,122	5,184	6,259	6,415	6,399	7,725	8,631	7,859	8,557	9,260	8,714	7,424	6,971	5,606	5,365	5,539	5,604
Australia	3,805	4,750	5,718	5,826	5,878	7,099	8,140	7,446	8,060	8,739	8,174	6,860	6,328	5,099	4,880	5,057	5,123
New Zealand	317	434	542	589	521	626	491	413	496	521	540	564	644	508	485	482	481

EU = European Union.

* = amount < \$500,000.

Note(s):

Value added is the amount contributed by a country, firm, 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 or minor discrepancies. World total does not include all countries and economies due to limitations in data availability. See Table S6-1 for a full list of countries and economies in each region.

Source(s):

IHS Markit, special tabulations (2019) of Comparative Industry Service.

Science and Engineering Indicators

TABLE S6-10

Value added of weapons and ammunition industry, by region, country, or economy: 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
World	15,976	18,247	21,237	23,422	26,844	31,065	36,668	32,244	35,729	40,782	44,102	47,206	47,647	43,735	44,694	47,028	50,090
North America	3,908	4,633	5,238	5,414	6,174	6,004	6,237	6,104	6,839	7,717	8,704	9,332	8,542	8,506	9,177	10,516	11,483
Canada	1,380	1,583	1,733	1,887	2,039	2,260	2,271	1,671	2,106	2,362	2,640	2,508	2,451	2,412	1,901	1,912	1,993
Mexico	305	280	302	362	412	414	465	355	401	436	434	405	383	341	346	361	380
United States	2,223	2,770	3,204	3,166	3,723	3,331	3,502	4,077	4,332	4,919	5,630	6,419	5,708	5,752	6,930	8,244	9,093
Central and South America	651	603	635	751	942	1,159	1,449	1,432	1,785	1,928	2,185	2,506	2,100	2,056	1,705	1,808	1,876
Argentina	34	50	62	71	79	91	109	97	117	124	119	112	77	85	65	68	58
Bolivia	1	*	*	*	*	*	*	*	*	*	*	*	1	1	1	1	1
Brazil	137	101	110	123	170	231	307	306	428	407	455	514	352	217	202	212	201
Chile	5	7	6	3	3	3	3	3	4	3	4	4	4	4	3	4	4
Colombia	5	6	7	20	10	14	18	17	19	21	21	31	28	8	9	10	10
Costa Rica	6	7	8	7	8	9	10	8	10	11	12	12	12	12	13	13	14
Ecuador	16	10	3	3	3	4	4	4	5	8	6	4	1	2	2	1	1
Honduras	153	155	153	196	280	308	337	253	371	440	500	519	506	503	530	556	577
Jamaica	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Panama	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Peru	223	201	196	218	260	339	447	514	698	747	882	1,135	974	946	835	853	899
Uruguay	1	1	2	2	3	3	4	5	5	6	6	6	7	6	6	6	6
Venezuela	71	65	87	107	127	157	210	224	127	159	179	169	139	273	40	84	105
Europe	6,998	7,913	9,333	10,008	11,221	14,163	16,894	13,098	13,570	14,885	14,774	15,617	16,171	13,546	13,900	14,237	14,481
EU	4,629	5,589	6,620	6,665	7,377	9,223	10,297	9,050	8,770	9,256	10,181	10,267	10,586	9,903	10,239	10,231	10,521
Austria	58	72	84	93	105	122	129	161	141	113	168	228	190	202	211	215	236
Belgium	143	151	160	166	173	201	207	208	158	180	170	169	168	157	163	167	179
Bulgaria	22	26	34	52	58	84	88	92	107	127	95	94	161	192	248	311	317
Czechia	42	50	61	76	93	111	141	117	116	138	126	144	180	183	201	217	247
Denmark	420	486	543	546	589	696	797	665	523	472	486	608	616	534	583	558	556
Finland	30	39	45	48	45	63	92	63	56	68	64	60	72	69	72	71	79
France	851	957	959	975	1,200	1,365	1,223	1,155	1,143	1,214	1,146	1,251	1,240	1,067	1,164	1,181	1,250
Germany	620	803	826	879	1,016	1,127	1,200	1,317	1,279	1,310	1,465	1,523	1,421	1,219	1,420	1,370	1,241
Greece	59	53	54	61	61	59	70	51	48	50	45	34	44	24	24	22	18
Hungary	3	3	4	4	5	6	6	7	5	8	10	9	8	8	9	10	11
Ireland	205	214	209	274	243	341	341	265	182	190	196	232	236	207	232	402	434
Italy	555	690	689	627	656	818	897	880	844	914	961	841	930	790	728	662	740
Netherlands	620	755	883	911	1,006	1,167	1,167	1,033	1,188	1,394	1,289	1,299	1,381	1,140	1,185	1,178	1,287
Poland	62	81	71	78	113	130	218	175	187	216	211	185	188	177	172	177	203
Portugal	15	18	19	18	19	21	22	20	18	18	17	20	20	15	16	16	18

TABLE S6-10

Value added of weapons and ammunition industry, by region, country, or economy: 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
Romania	35	100	82	69	83	112	112	65	69	68	78	91	111	77	80	99	106
Slovakia	36	52	67	70	81	107	139	159	86	23	46	33	53	44	14	14	15
Spain	94	116	124	119	123	142	157	118	111	149	145	162	216	172	174	171	179
Sweden	181	215	230	250	281	347	345	302	370	384	390	325	253	239	242	245	266
United Kingdom	579	707	1,476	1,349	1,430	2,205	2,945	2,198	2,139	2,220	3,073	2,959	3,098	3,389	3,303	3,143	3,138
Other Europe	2,369	2,324	2,714	3,343	3,844	4,940	6,597	4,048	4,799	5,629	4,593	5,350	5,585	3,642	3,661	4,005	3,959
Norway	116	130	124	153	181	263	424	430	606	653	692	602	536	404	348	416	443
Russia	1,286	1,141	1,372	1,874	2,324	3,212	4,579	2,378	2,716	3,177	2,291	3,235	3,490	1,772	1,838	1,940	1,933
Switzerland	641	722	808	767	839	913	969	754	921	1,107	964	927	911	790	744	714	781
Turkey	295	290	353	478	409	430	485	423	474	596	550	510	577	642	694	890	749
Ukraine	31	41	57	72	91	123	140	63	83	95	97	76	70	35	37	46	53
Middle East	131	166	227	260	259	304	405	472	392	393	426	363	329	258	353	385	418
Bahrain	7	7	8	10	14	18	23	18	21	25	26	28	29	24	28	29	31
Iran	47	58	67	79	86	85	98	78	74	70	56	39	47	39	46	53	39
Israel	16	27	54	57	46	55	67	65	62	63	59	11	16	16	17	18	19
Jordan	2	1	2	2	3	4	5	6	6	6	7	9	10	10	17	16	17
Kuwait	48	59	79	93	85	110	176	187	196	193	239	237	184	117	176	196	236
Qatar	*	*	*	*	*	1	1	92	5	7	9	9	9	15	14	15	17
Saudi Arabia	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
United Arab Emirates	12	13	15	19	25	29	33	25	27	30	29	30	34	38	55	57	59
Africa	1,719	1,987	2,456	3,008	3,697	4,218	5,102	4,874	6,024	7,589	8,355	10,103	11,374	9,851	9,765	9,332	10,038
Cameroon	1	1	1	1	1	1	2	2	2	2	2	2	2	2	2	2	3
Egypt	4	3	4	4	5	6	8	9	9	6	12	8	13	16	22	27	35
Kenya	3	4	5	7	27	24	24	21	20	17	22	27	28	25	27	26	28
Morocco	427	468	562	650	634	764	893	906	986	969	914	1,010	1,070	844	888	974	1,023
Nigeria	1,033	1,138	1,371	1,811	2,432	2,847	3,555	3,337	4,192	5,860	6,617	8,312	9,573	8,332	8,242	7,690	8,316
Senegal	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
South Africa	250	372	511	533	594	571	615	594	810	728	783	739	681	627	579	606	626
Tunisia	2	2	3	3	3	5	6	5	6	7	6	6	6	5	6	6	6
Zimbabwe	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Asia	2,171	2,378	2,714	3,264	3,868	4,445	5,743	5,552	6,332	7,347	8,687	8,420	8,370	8,725	8,933	9,771	10,812
Bangladesh	2	3	4	5	7	8	9	11	12	13	13	16	19	20	24	31	35
China	524	487	567	701	886	1,184	1,639	1,785	2,120	2,566	2,944	3,329	3,527	3,657	3,880	4,360	5,036
India	6	8	10	8	9	12	13	28	25	29	20	43	40	38	40	38	39
Indonesia	4	5	4	14	13	18	20	20	25	42	66	27	39	40	43	47	50
Japan	491	587	608	670	638	644	1,319	1,321	1,085	1,303	2,165	1,352	673	580	720	681	686

TABLE S6-10

Value added of weapons and ammunition industry, by region, country, or economy: 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
Malaysia	511	573	687	808	1,066	1,214	1,376	1,084	1,268	1,404	1,548	1,669	1,779	2,259	2,121	2,287	2,555
Pakistan	14	19	27	32	53	61	69	57	68	85	88	88	94	94	93	100	94
Philippines	7	10	11	10	8	10	14	17	19	19	21	26	16	19	18	18	17
Singapore	224	238	294	334	435	439	470	406	590	697	731	723	760	622	637	607	631
South Korea	244	312	373	537	609	711	655	646	942	994	893	946	1,215	1,187	1,132	1,361	1,425
Sri Lanka	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Taiwan	141	136	127	140	137	137	148	168	165	180	183	185	194	195	210	224	226
Thailand	2	2	2	3	6	8	9	9	12	12	14	14	14	12	13	14	16
Vietnam	*	*	*	*	*	1	1	1	1	1	1	1	2	1	1	1	2
Oceania	398	567	634	716	683	773	836	712	787	923	971	864	762	793	861	980	983
Australia	324	464	511	579	563	631	688	570	656	774	817	695	582	631	682	769	774
New Zealand	74	103	123	137	120	142	148	141	132	149	154	169	179	163	179	211	209

EU = European Union.

* = amount < \$500,000.

Note(s):

Value added is the amount contributed by a country, firm, 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 or minor discrepancies. World total does not include all countries and economies due to limitations in data availability. See Table S6-1 for a full list of countries and economies in each region.

Source(s):

IHS Markit, special tabulations (2019) of Comparative Industry Service.

Science and Engineering Indicators

TABLE S6-11

Value added of motor vehicles industry, by region, country, or economy: 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
World	484,528	546,524	582,904	605,078	634,688	699,328	685,228	558,876	749,205	826,648	867,877	893,445	957,659	942,453	993,958	1,053,001	1,109,702
North America	169,132	175,990	171,877	170,023	170,069	162,172	122,828	70,997	122,845	142,288	158,524	167,887	180,863	194,246	199,696	207,888	219,402
Canada	18,393	18,984	18,079	18,099	16,973	17,157	12,557	9,026	13,095	13,183	14,301	13,861	13,975	12,657	11,441	11,826	11,808
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	35,991	34,637	37,174	38,442
United States	135,235	143,151	139,136	135,998	134,062	124,937	90,324	47,800	88,695	104,195	115,313	122,761	132,130	145,598	153,619	158,888	169,153
Central and South America	11,812	13,723	17,354	22,447	28,007	37,532	49,543	44,272	56,112	65,178	54,240	53,896	43,048	29,339	22,684	29,185	30,132
Argentina	1,033	1,317	1,712	2,292	3,126	4,323	5,606	4,784	5,096	5,875	5,312	5,314	3,182	2,616	2,511	2,982	2,612
Bolivia	3	3	3	3	3	4	4	5	5	5	5	6	6	6	7	7	8
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	17,974	23,128	24,586
Chile	78	78	97	107	115	121	93	97	115	135	130	138	24	22	26	30	27
Colombia	396	340	391	511	618	905	695	526	760	902	984	839	863	701	767	737	819
Costa Rica	70	58	72	78	88	100	108	95	115	129	138	141	140	143	150	157	162
Ecuador	120	73	46	61	75	92	130	151	154	213	113	158	159	135	117	120	115
Honduras	48	49	52	56	60	65	70	74	72	88	97	88	94	93	100	107	114
Jamaica	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Panama	*	*	*	*	*	1	1	1	1	1	1	1	1	1	1	1	1
Peru	64	72	89	106	119	171	257	281	391	454	543	601	623	560	557	703	680
Uruguay	46	39	32	27	24	27	47	29	88	104	83	62	60	40	36	38	47
Venezuela	1,247	1,152	1,536	1,891	2,241	2,767	3,421	4,282	2,227	2,671	3,173	3,000	2,466	4,828	438	1,176	961
Europe	134,712	166,229	187,063	187,433	205,091	237,793	236,392	172,873	219,944	252,541	233,771	253,679	280,057	258,205	265,866	271,567	285,745
EU	129,692	161,141	180,749	179,544	196,430	226,981	223,503	163,611	208,621	238,834	219,909	238,095	266,714	246,221	253,078	255,794	270,321
Austria	2,610	3,267	3,924	4,499	4,672	5,423	5,534	4,317	4,156	4,760	4,950	4,935	5,150	4,255	4,423	4,446	5,251
Belgium	3,363	4,076	4,256	4,202	4,186	4,268	4,426	3,274	3,500	3,809	3,512	3,742	3,706	2,537	2,571	2,602	2,550
Bulgaria	36	40	54	72	81	117	67	99	107	168	162	184	245	241	200	242	302
Czechia	2,456	2,688	4,080	4,741	5,657	7,066	8,218	6,727	7,872	9,159	8,036	8,138	9,399	8,696	9,809	10,660	11,751
Denmark	344	381	417	524	561	534	604	367	426	522	420	382	389	387	445	419	440
Finland	404	439	471	558	597	742	757	491	507	644	532	546	598	540	551	575	677
France	13,179	15,426	17,832	16,213	15,214	16,547	16,241	12,980	14,243	14,655	12,266	12,497	12,441	11,602	12,256	11,975	12,980
Germany	63,331	80,814	88,066	87,068	98,677	115,934	109,436	81,062	111,926	134,758	127,537	134,807	153,001	137,480	139,997	141,180	147,349
Greece	104	216	296	223	118	164	232	156	181	125	96	114	97	72	87	113	112
Hungary	1,426	1,964	2,266	2,694	3,455	4,473	4,594	3,170	3,932	4,057	3,386	4,459	5,063	5,104	5,543	5,591	5,731
Ireland	174	198	243	277	273	340	278	196	196	262	250	263	269	240	245	450	494
Italy	10,147	11,889	13,807	13,361	15,040	17,906	17,385	13,138	14,702	15,188	12,220	13,580	14,136	13,566	13,549	13,691	14,071
Netherlands	1,884	2,345	2,781	2,609	2,739	3,322	3,669	1,647	2,363	2,987	2,331	2,411	2,544	2,762	3,314	3,638	4,293
Poland	1,399	2,350	3,342	3,935	4,406	4,887	6,231	5,098	5,316	6,890	6,598	7,124	7,664	7,102	7,357	7,624	8,036
Portugal	1,354	1,477	1,610	1,541	1,566	1,797	1,753	1,412	1,565	1,699	1,497	1,540	1,654	1,438	1,473	1,517	1,755

TABLE S6-11

Value added of motor vehicles industry, by region, country, or economy: 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
Romania	212	297	423	646	814	1,132	1,463	1,237	1,492	1,217	1,726	2,142	2,520	2,455	2,904	3,857	4,699
Slovakia	418	784	953	966	1,180	2,104	2,797	1,839	2,553	3,226	2,987	3,207	3,758	3,259	3,493	3,596	4,042
Spain	9,848	12,477	14,103	13,546	14,537	16,239	15,585	12,799	11,829	11,880	9,679	11,473	13,135	13,459	13,872	14,060	14,607
Sweden	4,930	6,820	7,851	7,211	7,734	8,985	9,141	4,472	8,723	9,650	8,104	8,621	9,026	10,339	11,015	11,162	12,161
United Kingdom	12,071	13,194	13,973	14,658	14,924	15,001	15,093	9,132	13,033	13,179	13,620	17,929	21,918	20,688	19,975	18,395	19,020
Other Europe	5,021	5,088	6,314	7,889	8,661	10,812	12,889	9,262	11,323	13,707	13,863	15,584	13,343	11,984	12,788	15,773	15,424
Norway	362	408	427	433	454	461	452	289	331	397	390	416	380	250	251	267	284
Russia	1,982	1,151	1,577	1,920	2,366	3,202	3,756	3,978	4,501	5,348	6,348	6,934	5,591	3,743	4,410	4,883	5,648
Switzerland	296	334	357	367	464	512	581	539	730	965	815	845	857	802	698	651	663
Turkey	2,326	3,103	3,828	5,015	5,190	6,360	7,707	4,240	5,375	6,524	5,809	6,862	5,987	6,917	7,121	9,342	8,109
Ukraine	54	91	125	155	187	278	393	217	386	473	501	528	527	272	309	629	720
Middle East	2,477	3,569	3,675	4,550	6,122	6,206	7,248	8,929	9,310	9,070	7,914	6,127	6,835	5,773	6,877	7,555	6,095
Bahrain	33	36	39	52	70	90	115	91	105	122	129	136	142	119	139	146	158
Iran	1,807	2,898	2,911	3,713	5,188	5,087	5,931	7,560	7,735	7,311	5,832	4,113	4,941	4,128	4,947	5,585	3,962
Israel	225	217	215	224	243	286	318	324	328	299	278	289	279	263	282	296	283
Jordan	11	10	11	11	14	17	21	22	20	19	12	11	8	27	29	31	36
Kuwait	158	142	187	188	172	261	349	476	574	743	964	794	633	388	565	623	730
Qatar	*	*	1	1	1	2	2	1	7	10	13	13	14	13	12	14	15
Saudi Arabia	199	217	252	289	336	352	382	359	434	458	563	645	674	674	717	729	777
United Arab Emirates	45	50	59	72	98	111	130	96	106	107	122	126	144	162	186	130	133
Africa	2,344	3,018	3,764	4,425	5,112	5,420	5,395	4,729	6,160	7,114	7,905	8,987	10,105	8,995	7,393	6,955	7,712
Cameroon	1	1	1	1	1	2	3	3	3	3	3	3	4	3	4	4	5
Egypt	129	106	139	162	178	221	280	308	396	488	303	401	551	516	454	500	629
Kenya	24	29	37	31	40	76	93	86	92	140	156	183	206	223	243	237	259
Morocco	261	253	258	311	402	493	563	535	624	613	593	818	825	701	866	997	1,138
Nigeria	465	513	618	816	1,096	1,283	1,602	1,504	1,889	2,595	3,443	4,446	5,474	4,495	2,623	2,001	2,138
Senegal	*	1	*	1	2	*	1	4	4	4	4	4	4	4	4	4	4
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	3,152	3,478
Tunisia	12	15	17	18	24	29	36	41	42	51	48	53	57	51	54	60	60
Zimbabwe	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Asia	161,107	180,244	194,791	211,997	216,133	245,519	259,697	252,878	329,371	344,267	400,449	398,991	433,056	442,780	488,555	527,604	559,422
Bangladesh	75	56	75	88	83	84	98	120	134	135	136	133	186	218	226	187	208
China	27,556	34,473	32,201	33,920	41,927	56,250	70,386	87,670	120,025	136,607	157,784	180,573	210,200	221,574	247,819	282,893	302,036
India	1,974	2,959	3,916	4,256	5,104	6,472	6,400	8,909	10,657	13,384	13,250	10,772	14,089	14,328	13,727	15,426	17,414
Indonesia	5,247	6,604	7,836	6,327	4,735	6,765	9,050	8,665	11,852	11,821	13,453	12,490	12,089	12,223	12,874	13,279	13,567
Japan	102,625	109,476	119,679	130,975	123,874	129,495	129,605	109,097	139,361	129,536	160,085	131,249	130,855	125,691	144,762	137,022	144,631

TABLE S6-11

Value added of motor vehicles industry, by region, country, or economy: 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
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	2,786	2,987	3,410
Pakistan	296	405	670	897	899	815	685	567	826	1,091	1,103	968	1,064	1,398	1,408	1,728	1,628
Philippines	424	428	471	547	558	766	965	848	1,310	1,172	1,044	1,579	3,226	3,513	4,028	4,162	3,431
Singapore	41	135	113	122	140	132	112	128	137	184	166	278	281	256	288	357	346
South Korea	12,870	14,408	17,099	20,447	23,410	27,280	22,437	20,427	28,393	33,862	34,555	37,913	40,474	41,339	40,717	48,892	50,289
Sri Lanka	81	100	109	144	29	51	68	15	35	38	39	46	59	57	57	64	64
Taiwan	3,439	3,517	3,589	4,128	3,261	3,057	2,796	2,706	3,336	3,867	3,802	3,939	4,363	4,511	4,490	4,712	4,487
Thailand	4,676	5,890	7,224	8,648	10,497	12,555	14,789	11,399	10,368	9,262	11,452	15,095	11,197	12,733	13,147	13,455	15,108
Vietnam	116	170	185	275	380	553	728	907	914	1,020	1,030	1,253	2,118	1,881	2,225	2,442	2,805
Oceania	2,942	3,750	4,381	4,203	4,155	4,686	4,123	4,198	5,463	6,190	5,074	3,878	3,695	3,116	2,885	2,246	1,193
Australia	2,858	3,644	4,256	4,069	4,033	4,540	3,975	4,069	5,294	5,967	4,893	3,681	3,464	2,832	2,610	1,922	851
New Zealand	84	106	124	134	122	146	148	129	169	223	181	197	231	285	275	324	343

EU = European Union.

* = amount < \$500,000.

Note(s):

Value added is the amount contributed by a country, firm, 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 or minor discrepancies. World total does not include all countries and economies due to limitations in data availability. See Table S6-1 for a full list of countries and economies in each region.

Source(s):

IHS Markit, special tabulations (2019) of Comparative Industry Service.

Science and Engineering Indicators

TABLE S6-12

Value added of machinery and equipment industry, by region, country, or economy: 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
World	444,114	496,391	571,794	619,563	677,542	781,393	885,233	743,551	861,251	1,013,599	1,032,153	1,039,668	1,064,266	995,070	1,015,964	1,086,016	1,195,210
North America	118,466	117,684	126,535	138,864	148,688	158,243	160,381	142,013	155,556	178,435	187,727	193,565	194,785	186,216	173,729	183,237	201,444
Canada	7,640	8,411	9,698	10,714	11,958	13,034	12,722	10,155	11,440	14,507	15,253	14,717	13,900	12,337	10,983	12,155	12,831
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	8,330	7,991	9,088	9,568
United States	106,544	105,189	112,187	122,939	130,860	139,113	141,131	127,268	137,167	155,909	163,889	170,056	172,266	165,549	154,754	161,995	178,740
Central and South America	6,804	7,233	9,299	10,274	12,223	16,241	20,534	16,995	24,337	29,172	27,075	26,632	25,126	17,382	15,644	16,568	16,426
Argentina	246	278	347	413	470	586	726	723	880	1,028	1,105	1,070	768	559	355	186	145
Bolivia	4	3	3	3	4	5	6	6	7	8	9	9	10	10	10	10	11
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	12,475	13,210	12,917
Chile	36	35	45	52	61	66	59	56	71	78	75	75	1,041	944	887	873	921
Colombia	185	185	246	309	364	495	547	471	579	606	630	672	630	480	549	558	584
Costa Rica	157	163	183	183	205	234	253	222	269	303	324	330	329	335	353	373	387
Ecuador	10	6	9	11	14	16	20	19	23	13	66	38	47	53	42	19	20
Honduras	31	32	30	38	55	60	64	49	73	86	99	104	101	102	108	115	122
Jamaica	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Panama	1	1	1	1	1	1	1	1	1	1	2	2	1	1	1	1	1
Peru	177	263	225	241	280	244	295	268	343	573	674	716	817	796	712	922	982
Uruguay	5	5	6	6	8	9	12	12	52	14	23	22	21	15	16	17	16
Venezuela	267	247	329	405	480	592	848	958	502	536	614	580	477	934	135	284	320
Europe	159,000	187,312	222,157	232,700	256,148	308,052	340,944	251,900	275,364	323,556	303,517	314,773	323,554	275,476	280,028	295,670	319,956
EU	145,439	170,998	201,521	208,711	228,177	271,636	297,547	223,194	242,211	283,155	264,661	275,453	286,596	248,115	252,406	264,950	288,697
Austria	4,197	5,118	6,047	6,434	7,163	8,688	9,806	8,042	8,164	10,198	9,614	10,217	10,260	8,610	8,616	9,193	10,127
Belgium	2,524	2,873	3,297	3,547	4,041	4,881	5,323	3,900	4,115	4,968	4,561	4,557	4,794	3,890	4,102	4,380	4,760
Bulgaria	111	162	253	296	331	479	502	296	372	439	421	463	538	472	506	652	722
Czechia	1,496	1,681	2,025	2,481	3,347	4,318	5,155	4,086	4,273	4,773	4,579	4,808	4,886	4,286	4,365	4,988	5,338
Denmark	4,258	4,229	4,907	4,648	5,797	7,203	7,872	6,362	5,926	7,091	6,416	7,512	6,846	6,686	7,345	7,122	7,875
Finland	2,695	3,211	3,773	4,067	4,791	5,950	6,906	5,520	5,667	6,383	5,881	5,716	5,789	5,148	5,105	5,572	6,250
France	11,430	13,701	15,515	15,492	16,272	18,711	20,041	15,673	14,894	17,172	15,999	15,924	16,482	13,883	14,821	15,081	15,864
Germany	59,112	71,520	83,372	85,562	93,273	112,393	124,705	91,876	102,108	120,434	113,532	118,586	124,334	106,353	108,315	112,836	122,236
Greece	375	490	576	669	707	767	1,038	850	683	677	638	664	619	537	558	605	658
Hungary	637	755	915	1,064	1,135	1,426	1,676	2,901	3,058	3,487	3,562	3,369	3,523	3,408	2,261	2,606	2,483
Ireland	933	1,142	1,485	1,583	1,629	2,081	2,048	1,336	889	1,226	1,255	1,369	1,416	3,431	3,332	2,859	2,974
Italy	24,043	29,871	34,685	35,629	38,968	45,875	49,545	38,645	40,174	44,713	41,314	43,738	45,642	38,842	40,253	41,922	46,268
Netherlands	4,507	5,675	7,180	7,299	8,393	9,971	10,631	8,417	10,379	12,241	10,143	10,828	11,851	9,783	9,896	11,194	12,716
Poland	1,544	1,768	2,104	2,673	3,122	4,271	5,260	4,684	4,326	4,529	4,192	4,040	4,445	3,874	4,193	4,928	5,644
Portugal	621	726	783	781	843	1,032	1,151	1,008	943	909	901	980	1,096	924	943	994	1,047

TABLE S6-12

Value added of machinery and equipment industry, by region, country, or economy: 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
Romania	428	464	559	593	724	1,006	1,300	857	790	1,519	968	1,185	1,150	910	967	1,053	1,342
Slovakia	324	455	597	676	779	1,029	1,325	817	1,140	1,274	1,208	1,348	1,618	1,184	1,449	1,552	1,775
Spain	6,156	7,527	8,923	9,278	10,033	11,528	13,210	11,278	10,460	11,581	11,297	11,927	12,837	11,594	12,115	13,141	14,490
Sweden	5,576	6,685	7,281	7,829	8,855	10,596	10,511	6,217	9,540	11,918	10,716	10,244	9,420	8,474	8,630	9,144	9,944
United Kingdom	14,472	12,944	17,243	18,109	17,975	19,431	19,542	10,428	14,313	17,624	17,464	17,978	19,049	15,826	14,635	15,128	16,184
Other Europe	13,561	16,314	20,636	23,990	27,971	36,416	43,397	28,705	33,153	40,400	38,856	39,320	36,959	27,361	27,622	30,720	31,258
Norway	1,258	1,367	1,438	1,625	2,192	2,948	4,045	3,874	3,632	4,202	4,326	4,335	4,478	3,198	2,579	2,798	2,966
Russia	4,050	5,357	8,078	10,126	12,577	18,421	22,151	10,729	12,832	15,864	15,695	15,179	12,799	6,405	7,014	8,031	8,065
Switzerland	7,115	7,932	8,622	8,740	9,363	10,354	11,712	10,114	11,459	13,713	11,905	12,253	12,441	11,642	11,735	11,873	12,525
Turkey	931	1,378	2,078	2,934	3,168	3,823	4,327	2,715	3,438	4,424	4,539	5,361	5,272	5,091	4,964	6,143	5,506
Ukraine	206	279	421	565	670	871	1,162	1,273	1,791	2,198	2,390	2,192	1,969	1,026	1,329	1,876	2,196
Middle East	2,188	2,305	2,563	2,899	3,326	4,269	4,975	4,835	5,090	5,156	4,615	4,766	5,443	5,255	6,016	6,520	6,542
Bahrain	14	15	16	22	29	38	48	38	44	51	54	57	59	49	58	61	67
Iran	463	531	620	738	851	1,173	1,158	1,235	1,392	1,315	1,049	740	889	743	880	1,008	736
Israel	846	804	785	767	853	1,036	1,386	1,375	1,380	1,495	1,093	1,288	1,691	1,688	1,756	1,953	2,019
Jordan	36	48	61	62	80	112	119	85	65	46	49	55	71	103	101	113	104
Kuwait	221	236	302	387	366	459	609	439	492	329	273	277	258	192	298	335	405
Qatar	*	*	1	*	1	3	3	203	11	16	19	20	21	25	24	26	30
Saudi Arabia	365	398	461	530	615	844	949	939	1,132	1,251	1,384	1,570	1,725	1,671	1,770	1,799	1,918
United Arab Emirates	243	272	317	393	530	604	705	520	574	653	694	760	730	785	1,129	1,226	1,264
Africa	2,113	2,670	3,244	3,661	4,112	4,632	4,958	4,600	5,354	6,255	6,705	7,532	8,148	7,262	7,486	7,594	8,204
Cameroon	1	1	2	2	2	2	4	4	4	5	5	5	6	5	5	6	7
Egypt	81	67	88	102	112	139	176	194	215	270	228	294	414	488	614	670	697
Kenya	10	12	16	19	79	72	70	63	40	31	21	25	4	4	4	4	4
Morocco	382	458	489	536	548	628	735	673	741	689	701	786	852	634	701	804	829
Nigeria	546	602	725	957	1,286	1,505	1,879	1,764	2,216	3,098	3,498	4,393	5,060	4,404	4,444	4,259	4,755
Senegal	1	1	1	1	1	1	1	2	1	1	1	1	2	1	1	1	1
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	1,757
Tunisia	53	65	74	81	91	105	127	129	133	150	141	122	129	121	133	152	154
Zimbabwe	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Asia	153,022	176,087	204,041	226,902	248,737	284,673	348,333	318,225	389,164	463,487	495,146	485,621	500,289	498,660	528,445	571,216	637,445
Bangladesh	21	23	24	26	31	32	37	46	52	53	55	62	76	93	139	214	243
China	33,508	40,961	46,785	59,628	75,223	100,152	144,712	150,567	186,383	231,064	254,555	280,106	292,879	298,519	306,759	347,922	397,691
India	3,329	3,873	5,267	6,118	6,952	8,888	9,732	9,142	10,981	13,130	12,416	9,380	10,824	11,052	11,449	12,250	12,646
Indonesia	427	418	295	648	841	953	992	1,010	1,253	1,919	2,089	2,270	2,286	2,248	2,441	2,614	2,834
Japan	97,725	110,423	128,434	132,930	134,069	139,278	158,249	126,817	150,440	171,358	178,371	143,418	139,529	133,954	155,053	147,567	161,157

TABLE S6-12

Value added of machinery and equipment industry, by region, country, or economy: 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
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	2,078	2,321	2,637
Pakistan	50	67	95	113	186	213	242	200	237	298	306	308	329	327	327	354	332
Philippines	209	270	279	175	139	166	186	227	212	253	278	293	215	224	274	273	292
Singapore	1,508	1,601	1,958	2,209	2,535	3,124	3,679	3,603	4,472	5,611	5,353	5,831	6,806	5,257	4,757	5,333	5,808
South Korea	11,337	13,082	14,857	18,507	21,036	23,526	21,675	19,163	25,060	28,650	29,414	31,443	33,752	33,521	33,353	39,637	40,396
Sri Lanka	21	23	25	29	18	35	46	50	57	58	52	55	56	62	70	79	80
Taiwan	3,495	3,847	4,206	4,683	5,356	5,639	5,714	4,613	6,079	7,025	7,635	7,465	8,444	8,284	8,137	9,153	9,468
Thailand	476	564	694	727	843	1,080	1,251	1,191	1,938	2,003	2,365	2,611	2,494	2,328	2,786	2,563	2,860
Vietnam	78	98	119	124	181	256	328	356	469	413	484	562	735	724	824	934	1,000
Oceania	2,522	3,101	3,955	4,262	4,308	5,282	5,106	4,984	6,385	7,538	7,366	6,779	6,921	4,821	4,616	5,210	5,194
Australia	1,952	2,337	3,037	3,246	3,413	4,167	3,945	3,957	5,130	6,132	5,862	5,285	5,223	3,302	3,181	3,531	3,387
New Zealand	571	764	918	1,016	895	1,116	1,162	1,026	1,255	1,406	1,505	1,494	1,698	1,518	1,435	1,680	1,807

EU = European Union.

* = amount < \$500,000.

Note(s):

Value added is the amount contributed by a country, firm, 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 or minor discrepancies. World total does not include all countries and economies due to limitations in data availability. See Table S6-1 for a full list of countries and economies in each region.

Source(s):

IHS Markit, special tabulations (2019) of Comparative Industry Service.

Science and Engineering Indicators

TABLE S6-13

Value added of chemicals and chemical products industry, by region, country, or economy: 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
World	388,907	428,459	485,381	515,152	543,709	635,308	697,638	660,662	792,254	897,184	888,422	920,914	932,157	901,915	888,488	914,635	1,026,461
North America	127,273	126,433	133,914	140,534	147,504	157,321	165,350	164,605	196,523	202,805	210,148	219,119	216,708	210,467	215,544	215,725	241,121
Canada	6,612	7,194	7,826	7,879	7,841	8,456	8,507	8,129	10,630	13,437	13,321	13,671	11,944	11,803	9,111	9,166	10,342
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	13,299	12,062	12,870	13,982
United States	110,835	110,555	115,810	122,057	126,263	135,052	141,492	144,371	171,738	174,703	180,075	187,686	190,081	185,365	194,371	193,689	216,797
Central and South America	16,165	18,786	22,998	26,742	29,752	37,712	47,002	42,475	51,553	57,813	56,334	55,146	50,549	46,887	40,847	44,907	44,317
Argentina	1,705	2,431	3,106	3,847	4,552	5,505	7,378	7,528	9,247	9,714	9,677	9,091	5,874	5,504	5,313	6,135	5,280
Bolivia	53	55	58	62	66	69	102	120	122	134	141	155	166	175	195	205	230
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	25,938	27,819	26,840
Chile	618	832	997	1,615	1,292	1,413	1,310	1,647	2,190	2,034	2,029	2,465	2,151	2,360	2,239	2,284	2,579
Colombia	1,562	1,661	1,930	2,189	2,359	2,747	3,281	3,432	3,819	3,843	4,280	4,318	4,274	3,635	3,335	3,606	3,811
Costa Rica	185	193	191	189	212	242	261	229	278	313	335	337	320	325	330	342	372
Ecuador	287	233	200	304	294	428	447	472	533	313	415	411	450	436	449	428	466
Honduras	113	115	100	122	120	130	150	149	139	179	201	198	204	202	208	221	242
Jamaica	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Panama	28	28	29	31	32	44	50	56	56	58	83	93	96	105	108	113	128
Peru	534	566	650	754	829	996	1,213	1,210	1,381	1,501	1,717	1,824	1,760	1,680	1,509	1,608	1,800
Uruguay	105	99	108	122	142	153	232	183	235	281	324	348	380	369	360	344	332
Venezuela	1,184	1,087	1,446	1,774	2,100	2,589	3,969	4,654	2,778	3,416	4,085	3,859	3,173	6,212	863	1,801	2,237
Europe	112,233	132,389	149,312	157,659	164,091	188,838	206,708	164,487	179,240	199,823	183,779	189,373	198,815	186,182	176,973	173,794	196,074
EU	103,846	121,707	135,398	141,225	145,089	166,368	171,626	144,781	155,664	169,332	157,175	163,255	172,934	167,825	159,442	155,143	174,050
Austria	1,473	1,817	2,002	2,026	2,428	2,817	2,925	2,661	2,575	2,968	2,376	2,877	3,206	3,095	3,101	3,002	3,376
Belgium	6,852	7,902	8,931	9,345	9,208	10,123	10,151	9,447	9,833	10,616	9,768	10,120	10,799	10,172	9,814	10,293	11,672
Bulgaria	139	170	197	223	230	269	181	209	254	408	289	287	284	323	354	441	479
Czechia	738	909	1,076	1,252	1,261	1,487	1,741	1,187	1,474	1,687	1,600	1,495	1,885	1,630	1,479	1,651	1,934
Denmark	1,103	1,381	1,509	1,581	1,567	1,654	2,014	2,061	2,141	2,135	2,494	2,491	2,480	2,291	2,152	1,995	2,303
Finland	1,363	1,619	2,041	1,992	2,031	2,546	2,640	2,147	2,241	2,813	2,084	2,386	2,355	2,243	2,259	2,271	2,611
France	11,692	13,921	15,677	16,514	16,585	19,358	21,401	19,697	18,515	21,122	19,657	22,512	23,197	20,091	19,796	19,211	21,305
Germany	34,095	39,445	44,008	44,215	44,861	52,015	55,702	48,036	54,280	57,507	51,914	53,950	56,775	52,120	49,844	48,931	54,102
Greece	473	681	727	741	881	932	1,059	858	843	784	944	1,192	1,250	1,144	1,157	1,105	1,370
Hungary	522	589	713	707	824	1,124	1,078	598	663	780	818	962	1,242	1,405	1,404	1,397	1,623
Ireland	813	795	1,087	929	899	2,509	2,281	2,449	2,162	5,030	6,677	5,050	4,283	11,526	7,931	6,598	7,603
Italy	9,333	10,510	11,891	11,879	12,156	13,941	13,778	11,931	13,103	13,463	12,310	13,050	16,419	12,075	12,558	12,255	13,819
Netherlands	7,333	9,055	10,971	11,381	12,610	14,408	14,515	10,336	10,983	12,462	11,222	10,781	10,366	10,433	11,147	10,929	12,423
Poland	1,608	1,782	2,222	2,643	3,025	3,280	3,868	2,955	3,664	4,480	4,240	4,064	4,443	4,491	3,731	3,830	4,433
Portugal	666	811	958	958	953	1,166	1,083	948	1,067	1,132	863	941	935	975	1,063	1,065	1,171

TABLE S6-13

Value added of chemicals and chemical products industry, by region, country, or economy: 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
Romania	185	185	227	302	445	619	800	668	692	1,038	636	713	628	563	563	667	776
Slovakia	285	282	305	360	455	540	662	522	549	677	551	518	530	601	525	521	598
Spain	7,125	8,604	10,152	10,726	11,475	12,959	14,435	12,715	13,523	15,122	12,789	12,636	13,392	12,320	11,863	11,941	13,418
Sweden	2,463	2,433	2,861	3,142	3,210	4,021	3,617	3,382	3,537	3,418	3,197	3,222	2,850	2,528	2,388	2,333	2,563
United Kingdom	15,584	18,819	17,842	20,309	19,984	20,601	17,696	11,973	13,567	11,690	12,748	14,009	15,616	17,801	16,314	14,707	16,471
Other Europe	8,387	10,681	13,914	16,435	19,002	22,470	35,082	19,706	23,576	30,491	26,605	26,118	25,881	18,357	17,531	18,651	22,024
Norway	690	805	872	1,087	1,256	1,624	2,215	1,270	1,529	1,400	970	1,161	1,350	1,190	968	887	1,018
Russia	2,955	4,081	6,360	9,056	10,426	12,751	23,052	10,677	13,115	18,964	17,153	15,116	14,302	7,164	6,042	6,763	7,461
Switzerland	2,548	2,964	3,290	3,557	3,928	4,344	5,003	4,828	5,203	5,279	3,999	4,299	4,449	4,525	5,067	4,950	5,762
Turkey	1,840	2,368	2,697	1,806	2,335	2,429	3,129	2,316	2,849	3,460	3,025	3,539	3,533	3,632	3,527	3,697	3,557
Ukraine	354	462	694	929	1,057	1,322	1,683	615	880	1,387	1,457	2,003	2,246	1,847	1,926	2,353	4,227
Middle East	8,932	9,682	12,441	14,010	17,085	26,759	32,222	30,373	35,763	40,893	44,311	46,308	49,185	44,341	46,875	50,492	54,592
Bahrain	53	57	62	83	112	144	183	145	167	192	202	215	224	188	212	223	261
Iran	2,114	1,950	2,794	2,634	3,852	5,897	6,307	7,743	8,271	7,818	6,236	4,399	5,283	4,414	5,025	5,701	4,636
Israel	413	450	572	693	823	930	1,390	1,251	1,311	1,525	1,352	3,958	3,555	3,619	3,629	3,854	4,324
Jordan	333	277	321	319	398	493	691	715	648	587	598	658	657	644	664	663	944
Kuwait	279	353	471	527	387	519	623	608	770	1,074	1,594	1,609	1,387	782	878	994	1,268
Qatar	693	1,061	1,801	2,255	2,475	5,662	7,835	5,162	7,063	9,863	12,121	12,464	13,114	7,917	6,783	7,243	8,729
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	23,778	25,437	27,604
United Arab Emirates	1,077	1,203	1,404	1,738	2,345	2,674	3,118	2,303	2,539	3,292	3,687	3,590	3,989	3,619	5,907	6,376	6,826
Africa	4,990	6,495	7,933	8,891	7,141	8,230	9,699	9,519	11,139	11,619	12,653	12,735	13,086	11,486	11,516	12,226	14,087
Cameroon	31	30	41	43	45	51	87	87	88	99	99	110	120	106	114	133	157
Egypt	866	710	930	1,081	1,190	1,478	1,870	2,058	2,463	2,658	2,943	2,263	1,805	1,612	1,889	2,200	3,014
Kenya	90	115	137	141	165	214	272	266	216	265	404	388	450	507	517	493	555
Morocco	521	579	607	797	742	969	1,157	1,056	1,396	1,342	1,195	1,543	1,885	1,578	1,631	1,819	2,135
Nigeria	423	467	562	742	996	1,166	1,455	1,367	1,716	2,399	2,711	3,403	3,924	3,415	3,408	3,342	3,843
Senegal	87	105	110	107	89	83	104	95	99	139	111	93	91	105	109	127	146
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	3,111	3,334
Tunisia	197	227	269	311	351	663	891	774	958	847	962	925	864	728	884	1,000	903
Zimbabwe	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Asia	117,107	132,108	155,748	163,959	174,798	211,785	231,826	244,178	312,108	377,864	374,937	391,732	397,302	397,229	391,641	411,521	470,098
Bangladesh	261	284	305	333	332	392	413	629	572	501	464	563	656	627	714	925	1,031
China	36,569	43,507	55,998	62,561	74,080	99,845	119,966	126,824	163,391	214,458	221,151	241,822	249,926	248,542	238,357	255,641	298,724
India	5,271	6,011	7,072	8,074	8,931	11,716	12,827	13,305	15,775	21,693	16,723	15,910	15,613	15,632	15,177	16,566	18,313
Indonesia	1,730	2,453	1,819	2,646	4,348	6,000	7,728	7,355	8,976	12,342	13,478	17,480	17,666	15,472	15,768	17,025	16,790
Japan	48,758	52,571	55,270	52,293	48,426	51,409	53,099	56,596	70,613	70,733	69,417	59,469	55,873	55,022	59,495	52,674	57,007

TABLE S6-13

Value added of chemicals and chemical products industry, by region, country, or economy: 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
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	5,262	5,791	6,932
Pakistan	929	1,252	1,777	2,122	1,881	2,138	2,480	2,038	2,412	3,023	3,098	3,137	3,363	3,332	3,134	3,330	3,212
Philippines	619	605	660	614	706	702	684	746	671	1,010	1,119	811	739	768	655	659	770
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	10,144
South Korea	11,027	12,083	15,045	16,658	17,388	19,670	18,034	17,177	22,695	26,423	25,133	26,182	27,549	28,212	25,344	28,378	33,107
Sri Lanka	216	254	315	418	1,580	504	391	474	667	719	558	565	417	399	370	409	438
Taiwan	6,759	7,124	9,597	10,161	7,631	8,949	6,271	8,207	12,642	11,839	9,455	10,154	10,005	12,233	13,370	15,826	17,413
Thailand	899	1,062	1,124	1,210	1,343	1,600	1,990	2,119	2,842	3,479	3,487	3,461	3,274	2,824	2,717	2,868	3,300
Vietnam	320	353	432	542	699	826	1,157	1,891	1,534	1,466	1,673	1,821	1,922	2,210	2,309	2,600	2,918
Oceania	2,209	2,566	3,035	3,358	3,338	4,663	4,832	5,025	5,928	6,367	6,260	6,502	6,513	5,323	5,091	5,970	6,171
Australia	1,723	2,087	2,459	2,742	2,799	4,047	4,421	4,487	5,329	5,784	5,540	5,645	5,716	4,619	4,318	5,049	5,197
New Zealand	485	478	576	616	539	617	411	538	598	583	720	857	796	704	773	921	975

EU = European Union.

Note(s):

Value added is the amount contributed by a country, firm, 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 or minor discrepancies. World total does not include all countries and economies due to limitations in data availability. See Table S6-1 for a full list of countries and economies in each region.

Source(s):

IHS Markit, special tabulations (2019) of Comparative Industry Service.

Science and Engineering Indicators

TABLE S6-14

Value added of electrical equipment industry, by region, country, or economy: 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
World	240,113	268,776	295,234	314,271	353,826	396,677	454,118	418,111	471,798	515,981	528,271	550,270	569,764	556,610	572,360	609,342	655,714
North America	50,548	51,801	49,238	51,203	60,405	59,979	65,461	58,935	59,876	57,924	62,179	67,761	63,716	72,762	66,502	67,525	71,189
Canada	2,448	2,307	2,746	3,052	3,138	3,478	3,540	3,233	3,513	4,061	3,997	3,790	3,007	3,196	2,826	2,683	2,734
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	6,641	6,073	6,315	6,594
United States	43,694	45,550	42,069	43,229	51,433	50,274	55,473	50,672	50,708	48,193	51,990	57,968	54,183	62,925	57,603	58,527	61,861
Central and South America	4,157	4,194	4,932	6,953	8,202	10,735	13,397	12,616	16,204	17,986	17,191	17,797	16,181	12,756	10,649	12,155	11,354
Argentina	188	228	309	371	438	586	750	637	809	964	914	910	733	706	718	807	624
Bolivia	2	2	2	2	2	2	2	2	3	3	3	3	3	3	4	4	4
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	7,253	8,404	7,632
Chile	76	68	83	100	123	134	125	152	179	170	179	215	259	245	237	232	240
Colombia	213	182	261	351	434	599	693	596	751	816	795	829	757	660	713	760	792
Costa Rica	259	242	291	403	452	515	557	489	592	667	714	726	724	737	775	816	844
Ecuador	47	26	47	57	72	77	95	99	95	80	210	138	138	165	177	170	183
Honduras	95	97	102	110	119	128	139	146	142	173	192	175	186	184	198	212	228
Jamaica	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Panama	4	4	4	5	5	7	7	8	8	9	11	12	9	10	10	11	12
Peru	90	75	100	112	141	189	251	194	229	194	236	313	315	321	365	366	383
Uruguay	11	14	21	23	23	29	49	33	46	36	35	40	39	44	38	31	30
Venezuela	150	138	185	227	269	333	435	563	445	643	737	697	573	1,121	161	341	384
Europe	81,235	95,506	109,606	110,676	124,376	142,223	160,271	127,843	136,274	149,094	138,374	142,337	144,938	122,515	125,255	125,129	132,664
EU	72,638	86,799	98,791	97,417	108,003	121,686	136,366	112,142	118,689	128,119	118,039	121,268	125,510	106,504	109,341	106,960	115,333
Austria	2,168	2,571	2,792	2,778	3,119	5,362	6,718	6,349	6,172	6,062	6,420	6,036	6,081	5,295	5,743	5,422	6,087
Belgium	1,553	1,826	2,037	2,095	2,198	1,984	2,352	2,275	2,298	2,327	1,888	1,894	1,923	1,524	1,573	1,414	1,504
Bulgaria	59	91	131	171	191	276	289	250	250	278	292	338	366	343	430	501	597
Czechia	866	1,198	1,574	1,772	2,205	2,913	3,261	2,758	3,107	3,947	3,565	3,640	3,900	3,495	3,597	3,690	4,184
Denmark	800	867	1,035	926	1,026	1,234	1,595	1,137	1,191	1,315	1,154	1,087	1,206	1,281	1,360	1,296	1,403
Finland	885	1,067	1,277	1,505	1,651	2,011	2,687	2,022	2,175	2,279	2,265	2,148	2,347	2,010	1,960	1,962	2,136
France	7,100	7,979	9,154	8,565	8,293	9,776	10,351	9,130	8,600	8,835	8,319	8,592	8,409	6,607	6,752	6,177	6,388
Germany	30,261	36,134	42,258	41,032	46,226	48,847	54,937	47,258	52,642	58,359	53,146	55,415	58,339	46,764	48,891	47,954	51,443
Greece	350	497	704	666	843	962	1,046	716	685	622	504	475	429	385	380	361	410
Hungary	909	1,310	1,840	2,173	1,965	2,554	2,602	931	1,023	1,065	997	1,055	1,243	1,052	1,126	1,122	1,273
Ireland	492	397	187	310	388	424	529	423	166	365	332	397	465	422	448	1,002	1,042
Italy	9,128	11,130	13,020	13,369	14,194	16,246	17,327	14,313	14,960	15,787	14,160	14,461	13,632	12,027	12,229	11,730	12,776
Netherlands	2,287	2,761	2,901	2,558	2,948	3,585	4,042	2,892	2,650	3,169	2,829	2,861	2,769	2,437	2,690	2,550	2,696
Poland	1,224	1,572	1,622	1,887	2,236	2,718	3,814	2,948	3,193	3,488	3,448	3,478	3,899	3,698	3,569	3,378	3,991
Portugal	651	716	760	756	766	867	970	875	885	842	715	769	770	656	654	652	717

TABLE S6-14

Value added of electrical equipment industry, by region, country, or economy: 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
Romania	241	311	405	508	660	904	993	795	1,150	1,116	1,163	1,417	1,862	1,620	1,939	2,460	3,069
Slovakia	214	317	347	462	530	659	949	578	786	853	831	975	880	901	949	993	1,115
Spain	4,164	5,289	6,152	6,025	7,422	8,408	9,489	7,657	7,154	6,466	5,643	5,745	5,941	5,397	5,527	5,474	5,762
Sweden	2,115	2,502	2,588	2,576	2,799	3,343	3,430	2,452	2,619	3,489	2,942	3,015	2,572	2,808	2,872	2,795	2,900
United Kingdom	7,170	8,263	8,008	7,282	8,342	8,614	8,984	6,382	6,983	7,456	7,426	7,469	8,476	7,781	6,651	6,028	5,840
Other Europe	8,597	8,708	10,815	13,259	16,374	20,537	23,905	15,702	17,585	20,975	20,335	21,068	19,428	16,011	15,914	18,170	17,331
Norway	561	611	734	828	945	1,103	1,226	1,046	1,154	1,259	1,274	1,401	1,350	962	892	1,124	1,188
Russia	3,470	2,765	4,091	5,283	7,384	9,557	10,751	4,780	6,349	7,851	7,790	7,162	6,344	4,277	4,757	5,255	5,126
Switzerland	2,990	3,331	3,708	3,840	4,047	4,808	5,932	5,461	5,333	6,473	5,824	6,043	6,136	5,741	5,274	5,609	5,602
Turkey	1,219	1,529	1,777	2,730	3,237	4,010	4,661	3,773	3,825	4,078	4,229	5,195	4,787	4,549	4,355	5,378	4,683
Ukraine	356	473	506	578	761	1,058	1,335	642	923	1,314	1,218	1,266	812	483	634	803	733
Middle East	2,140	2,375	2,708	3,208	3,787	4,467	5,182	5,471	5,764	5,929	5,635	5,650	5,987	5,840	6,993	7,308	7,208
Bahrain	52	56	61	82	110	142	180	143	166	192	202	214	223	187	217	228	246
Iran	682	743	868	1,044	1,152	1,414	1,442	2,229	2,123	2,006	1,600	1,129	1,356	1,133	1,332	1,516	1,112
Israel	144	180	143	141	162	197	235	206	225	235	222	166	192	195	222	221	197
Jordan	45	45	65	77	96	126	160	170	117	102	118	154	125	166	232	143	108
Kuwait	45	63	80	106	109	159	207	183	182	177	153	143	183	73	138	157	193
Qatar	2	2	*	1	1	6	5	44	23	32	39	41	43	49	46	50	56
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	3,217	3,277	3,508
United Arab Emirates	376	420	491	608	820	935	1,090	805	888	1,014	877	1,076	983	1,004	1,589	1,715	1,788
Africa	1,564	1,799	2,179	2,500	2,810	3,141	3,449	3,474	3,820	3,774	4,087	4,379	4,374	3,817	3,882	4,047	4,460
Cameroon	1	1	2	2	2	2	4	4	4	5	5	5	6	5	6	7	7
Egypt	401	329	431	501	551	685	866	953	891	661	808	977	806	660	775	921	1,049
Kenya	2	2	2	3	3	10	12	12	8	6	4	5	5	4	5	5	5
Morocco	467	529	577	648	654	750	836	783	845	808	790	823	885	700	750	806	893
Nigeria	132	146	175	232	311	364	455	427	536	750	847	1,064	1,225	1,066	1,044	962	1,064
Senegal	3	4	6	7	7	6	7	8	9	10	10	9	11	6	4	5	6
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	1,196	1,285
Tunisia	28	34	42	51	65	82	102	80	118	143	134	124	131	122	130	146	150
Zimbabwe	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Asia	99,178	111,323	124,500	137,534	151,930	173,567	203,707	207,483	247,158	278,091	297,704	309,558	332,256	336,956	357,094	390,844	426,477
Bangladesh	254	210	164	120	143	150	174	216	248	254	264	298	337	453	611	777	888
China	27,445	31,896	36,148	45,846	56,988	74,166	102,377	112,814	133,058	156,889	174,511	195,974	213,999	226,582	238,092	268,805	302,916
India	2,456	2,728	3,292	4,949	5,501	6,300	5,970	6,491	8,104	8,261	7,554	6,856	6,621	7,022	6,814	7,584	7,878
Indonesia	970	980	1,475	1,835	2,484	2,323	2,688	2,703	3,137	4,249	5,234	7,240	7,354	7,014	6,874	7,068	7,203
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	59,834	68,114	68,477	67,001

TABLE S6-14

Value added of electrical equipment industry, by region, country, or economy: 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
Malaysia	853	914	1,159	915	1,119	1,258	1,384	1,029	1,196	1,378	1,560	1,619	1,677	2,120	2,135	2,366	2,595
Pakistan	137	185	263	313	377	430	491	404	479	603	619	623	666	662	681	756	711
Philippines	466	424	478	542	526	582	632	691	778	649	524	578	602	707	670	686	763
Singapore	316	333	351	358	429	467	522	450	464	487	605	661	637	592	619	643	739
South Korea	7,687	8,688	10,705	11,671	13,619	14,710	13,636	13,269	17,620	19,376	20,137	22,359	23,696	22,708	22,928	23,314	25,057
Sri Lanka	18	21	23	31	199	118	94	82	118	128	131	154	161	154	140	157	157
Taiwan	2,633	2,718	2,817	2,990	3,441	3,741	3,521	3,129	4,229	4,322	4,715	4,712	4,782	4,703	4,754	5,004	5,186
Thailand	953	1,033	1,270	1,234	1,573	1,878	1,813	1,947	2,675	2,911	3,238	2,940	2,740	2,664	2,655	2,866	2,910
Vietnam	175	201	255	360	522	683	792	866	1,096	1,054	1,149	1,338	1,857	1,743	2,008	2,340	2,472
Oceania	1,290	1,777	2,070	2,198	2,315	2,566	2,651	2,288	2,701	3,183	3,102	2,788	2,313	1,964	1,986	2,335	2,362
Australia	1,075	1,469	1,693	1,770	1,913	2,077	2,350	2,082	2,431	2,860	2,786	2,398	1,901	1,585	1,608	1,875	1,900
New Zealand	215	309	376	428	402	488	302	206	271	322	316	390	412	379	378	459	462

EU = European Union.

* = amount < \$500,000.

Note(s):

Value added is the amount contributed by a country, firm, 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 or minor discrepancies. World total does not include all countries and economies due to limitations in data availability. See Table S6-1 for a full list of countries and economies in each region.

Source(s):

IHS Markit, special tabulations (2019) of Comparative Industry Service.

Science and Engineering Indicators

TABLE S6-15

Value added of railroad and other transport industry, by region, country, or economy: 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
World	36,790	42,482	47,880	51,384	57,363	67,966	80,251	78,796	86,793	95,358	97,452	96,947	103,314	103,876	103,865	111,395	119,935
North America	11,161	11,880	13,119	15,202	17,334	19,609	22,896	20,574	19,311	19,877	18,769	19,705	20,676	22,394	19,734	20,329	20,982
Canada	1,064	1,217	1,195	1,417	1,607	1,786	1,778	1,523	1,414	1,883	1,828	1,761	1,765	1,634	1,337	1,397	1,415
Mexico	556	512	647	728	718	686	841	579	585	885	1,215	1,206	1,406	1,785	1,491	1,560	1,622
United States	9,541	10,151	11,276	13,057	15,009	17,137	20,277	18,473	17,311	17,109	15,725	16,738	17,505	18,975	16,906	17,371	17,941
Central and South America	766	872	1,298	1,821	2,635	3,579	4,150	3,258	4,632	4,710	3,756	3,713	3,773	2,597	2,604	2,549	2,394
Argentina	13	15	20	25	27	32	35	33	33	35	31	31	23	21	23	31	21
Bolivia	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	2
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	1,879	1,800	1,631
Chile	1	1	1	1	1	1	1	2	2	2	2	2	7	7	7	7	8
Colombia	140	145	176	220	307	373	390	391	494	639	730	827	836	656	636	646	670
Costa Rica	1	1	1	1	1	1	1	1	1	1	2	2	2	2	2	2	2
Ecuador	30	32	23	13	13	19	19	26	27	18	36	30	30	27	27	27	27
Honduras	5	5	5	6	6	7	8	8	8	10	11	10	11	11	12	12	13
Jamaica	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Panama	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Peru	2	2	2	3	4	6	8	9	11	13	14	16	16	15	13	15	15
Uruguay	1	2	2	3	4	5	6	1	2	2	2	2	1	1	1	1	1
Venezuela	4	4	5	6	8	9	14	17	10	12	15	14	12	23	2	6	6
Europe	8,762	11,427	12,295	13,526	15,314	18,295	20,332	20,873	20,401	23,106	23,608	23,314	21,977	20,053	20,676	22,006	26,184
EU	8,223	10,668	11,174	12,174	13,656	16,081	17,667	17,091	15,640	16,586	16,168	16,012	17,304	15,807	15,550	15,556	18,392
Austria	412	635	595	602	903	1,088	1,320	1,000	796	1,014	629	959	927	662	717	735	847
Belgium	116	125	135	141	147	212	201	166	134	117	123	158	139	125	121	105	109
Bulgaria	8	13	16	26	30	43	27	38	29	37	32	27	25	35	35	40	52
Czechia	224	288	309	359	394	547	703	740	643	868	724	649	712	710	766	714	778
Denmark	48	70	58	57	54	46	106	107	64	100	103	80	83	80	76	77	79
Finland	25	33	30	33	26	23	31	40	36	143	160	162	124	83	104	108	117
France	1,318	1,603	1,406	1,660	1,681	1,988	2,270	2,389	2,408	1,080	1,791	1,891	2,054	1,842	1,787	1,705	1,900
Germany	1,459	2,006	2,089	2,436	2,717	3,427	3,100	3,299	3,210	3,638	3,129	2,990	3,796	3,862	3,939	3,812	4,424
Greece	8	10	13	13	21	25	20	18	13	10	20	10	7	11	11	10	10
Hungary	70	97	119	110	104	159	275	145	161	181	147	160	218	163	160	187	239
Ireland	13	37	22	25	22	23	29	11	7	17	12	11	7	9	8	15	16
Italy	1,727	2,045	2,567	2,572	2,814	3,072	3,413	2,574	2,684	2,056	2,200	1,960	2,391	2,048	2,226	2,212	2,417
Netherlands	201	245	267	261	255	363	438	488	279	341	352	388	443	367	352	322	358
Poland	229	289	273	259	332	350	409	409	393	682	694	685	805	681	591	612	719
Portugal	44	57	58	48	49	59	59	38	68	80	53	109	81	62	66	69	76

TABLE S6-15

Value added of railroad and other transport industry, by region, country, or economy: 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
Romania	56	97	104	129	185	257	333	228	168	216	200	145	189	117	118	138	152
Slovakia	35	49	54	52	54	75	118	101	193	153	164	135	141	123	102	107	119
Spain	1,094	1,348	1,401	1,819	2,177	2,702	3,355	3,332	2,423	3,039	3,048	2,681	2,143	1,963	1,913	2,098	2,678
Sweden	280	381	348	382	436	511	511	583	606	726	734	753	818	619	530	501	531
United Kingdom	856	1,241	1,309	1,189	1,255	1,111	949	1,385	1,324	2,085	1,851	2,060	2,199	2,245	1,927	1,986	2,771
Other Europe	539	759	1,121	1,352	1,657	2,214	2,665	3,781	4,761	6,520	7,440	7,301	4,673	4,246	5,127	6,450	7,792
Norway	8	10	14	15	20	20	20	7	10	33	26	27	21	16	14	14	15
Russia	195	243	341	449	576	884	1,010	2,037	2,389	3,325	4,235	5,174	3,248	3,087	3,910	5,166	6,360
Switzerland	131	165	196	204	230	261	318	306	453	693	681	733	741	696	677	639	669
Turkey	48	104	206	192	163	185	221	259	258	291	210	266	234	241	262	260	274
Ukraine	157	238	364	492	668	863	1,096	1,173	1,652	2,178	2,288	1,100	429	206	264	371	473
Middle East	287	319	396	430	902	908	1,101	1,028	1,021	1,110	1,079	1,121	1,165	1,221	1,398	1,548	1,564
Bahrain	*	*	*	*	*	*	*	*	*	1	1	1	1	1	1	1	1
Iran	121	144	192	210	285	154	134	113	124	117	93	66	79	66	79	90	64
Israel	92	95	112	114	486	609	798	778	748	832	803	866	886	957	1,090	1,224	1,263
Jordan	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Kuwait	2	2	3	4	3	5	9	9	10	13	12	10	10	8	13	14	16
Qatar	*	*	*	*	*	*	*	*	1	1	1	1	1	1	1	2	2
Saudi Arabia	33	34	38	40	43	44	48	46	47	51	58	64	64	66	73	68	67
United Arab Emirates	39	43	50	62	84	96	112	82	91	96	110	114	124	122	141	150	152
Africa	259	313	377	424	519	558	657	682	760	842	867	1,022	1,108	975	990	997	1,057
Cameroon	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Egypt	39	32	42	49	54	67	85	93	90	46	53	65	38	22	14	8	11
Kenya	6	8	10	8	11	8	9	9	8	8	12	12	7	6	7	6	7
Morocco	10	11	12	19	23	49	66	56	61	53	36	70	83	64	78	105	120
Nigeria	46	52	66	93	134	161	211	193	254	373	429	553	647	560	553	529	577
Senegal	*	*	*	*	*	*	*	1	*	*	*	*	*	*	*	*	*
South Africa	109	144	168	171	179	194	188	223	235	229	218	197	186	192	200	194	189
Tunisia	49	66	77	83	118	78	96	106	110	132	119	125	146	131	139	154	152
Zimbabwe	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Asia	15,259	17,283	19,783	19,311	20,223	24,402	30,401	31,724	39,750	44,755	48,495	47,477	54,030	56,181	57,992	63,293	67,087
Bangladesh	13	18	23	30	33	34	43	62	76	77	81	100	164	199	267	311	342
China	5,691	5,997	6,184	7,337	7,742	9,811	13,387	14,422	17,586	21,183	25,068	27,757	34,105	36,368	37,329	41,526	44,405
India	915	1,199	1,490	1,774	2,081	2,414	2,469	3,180	4,376	4,336	4,061	3,796	4,338	4,383	4,505	5,065	5,640
Indonesia	1,823	2,336	2,860	2,163	1,936	2,018	2,975	3,119	4,150	5,551	4,995	4,241	3,773	3,412	3,645	3,966	3,966
Japan	3,199	4,044	5,398	4,044	4,253	5,067	6,034	5,773	7,106	6,461	6,487	4,320	4,367	5,028	5,260	5,106	5,092

TABLE S6-15

Value added of railroad and other transport industry, by region, country, or economy: 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
Malaysia	26	28	35	45	48	53	76	53	77	81	133	90	101	55	49	50	53
Pakistan	14	19	28	33	154	166	184	162	168	173	167	141	147	141	136	149	122
Philippines	57	59	67	79	84	149	337	373	375	368	523	418	298	328	378	392	412
Singapore	356	269	201	57	55	80	99	85	260	318	311	326	371	229	174	299	328
South Korea	1,300	1,223	1,188	1,156	1,154	1,167	1,028	1,190	1,531	1,369	1,724	1,465	1,365	1,145	1,103	889	1,050
Sri Lanka	2	2	2	2	*	28	6	3	5	6	6	7	21	20	20	23	22
Taiwan	1,349	1,445	1,467	1,511	1,258	1,667	1,988	1,639	1,797	2,066	2,113	2,125	2,267	2,385	2,348	2,377	2,409
Thailand	390	501	621	757	951	1,024	1,033	773	1,199	1,371	1,501	1,302	1,044	1,007	1,059	1,128	1,199
Vietnam	124	143	219	322	474	724	742	890	1,042	1,397	1,325	1,390	1,669	1,482	1,720	2,013	2,047
Oceania	297	387	613	670	436	615	715	658	919	957	880	595	583	454	471	673	666
Australia	275	360	581	636	406	575	684	624	879	918	844	556	551	445	463	664	656
New Zealand	21	27	32	34	31	39	31	34	40	39	36	39	32	8	8	9	10

EU = European Union.

* = amount < \$500,000.

Note(s):

Value added is the amount contributed by a country, firm, 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 or minor discrepancies. World total does not include all countries and economies due to limitations in data availability. See Table S6-1 for a full list of countries and economies in each region.

Source(s):

IHS Markit, special tabulations (2019) of Comparative Industry Service.

Science and Engineering Indicators

TABLE S6-16

Value added of IT and other information services industry, by region, country, or economy: 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
World	505,562	554,334	619,728	659,840	718,496	808,107	929,114	913,014	982,541	1,108,619	1,143,048	1,205,592	1,274,942	1,264,453	1,346,512	1,467,987	1,621,824
North America	192,626	194,187	208,350	217,937	239,805	244,333	286,716	287,611	320,385	353,909	364,808	393,646	422,329	464,636	520,787	571,629	629,671
Canada	8,634	10,507	11,931	13,408	15,718	18,009	19,118	19,400	22,157	25,325	26,452	27,326	27,740	24,828	25,803	28,860	30,289
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	1,217	1,275
United States	183,168	182,888	195,512	203,475	222,996	225,125	266,312	267,124	297,064	327,389	337,136	365,087	393,250	438,598	493,792	541,553	598,108
Central and South America	7,870	8,306	10,645	14,345	17,267	22,176	26,803	28,044	34,508	41,796	41,108	43,522	42,642	37,522	35,286	39,779	37,180
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	5,116	6,066	4,913
Bolivia	48	47	47	47	50	56	66	74	79	86	99	109	115	127	139	150	162
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	20,733	23,113	21,019
Chile	568	582	735	1,377	1,658	1,944	2,488	2,305	2,962	3,743	4,041	4,214	3,775	3,410	3,404	3,590	3,847
Colombia	769	736	921	1,183	1,351	1,730	2,003	1,840	2,276	2,612	2,828	2,942	3,004	2,357	2,229	2,420	2,518
Costa Rica	51	54	60	66	83	99	115	129	175	218	251	282	323	367	396	423	447
Ecuador	124	144	156	172	178	209	208	215	260	308	344	377	394	371	369	387	409
Honduras	33	37	39	44	47	53	59	67	72	75	80	84	90	93	97	102	107
Jamaica	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Panama	181	194	208	220	244	252	284	318	361	404	449	520	555	596	633	686	755
Peru	467	493	540	593	677	728	832	791	895	988	1,095	1,164	1,171	1,075	1,080	1,258	1,322
Uruguay	195	149	155	197	222	267	365	417	573	686	787	908	938	900	905	1,044	1,081
Venezuela	537	416	453	495	581	703	938	1,217	813	1,032	1,341	1,307	1,126	1,903	185	540	600
Europe	169,092	202,645	237,634	250,995	272,871	326,262	361,486	328,881	330,051	376,453	372,610	400,796	421,110	378,526	392,336	429,338	471,384
EU	158,070	190,312	223,414	234,492	254,296	302,834	331,904	301,311	298,891	337,900	329,482	356,685	379,754	344,178	357,876	391,008	431,785
Austria	2,700	3,281	3,724	4,026	4,267	4,831	5,444	5,138	5,031	6,331	6,106	6,823	7,353	6,416	6,691	7,265	7,868
Belgium	3,415	3,996	4,436	4,659	5,100	6,399	7,347	7,229	7,264	8,392	8,441	8,585	8,950	7,920	8,550	9,549	10,588
Bulgaria	58	73	98	95	122	153	302	289	247	339	304	346	346	290	359	347	394
Czechia	858	1,116	1,289	1,881	2,336	3,201	4,295	4,072	4,041	4,910	4,545	4,694	4,817	4,526	4,774	5,630	6,176
Denmark	2,471	2,948	3,513	3,300	3,900	4,666	5,578	6,105	6,246	5,960	5,558	6,252	6,379	5,576	5,786	6,142	6,555
Finland	2,260	2,825	3,454	3,730	3,878	5,008	5,517	4,817	4,738	5,598	5,690	6,351	7,200	6,579	6,866	7,395	8,032
France	31,139	37,189	42,277	43,233	47,481	55,033	61,341	55,794	54,723	59,194	56,764	59,480	62,700	55,246	58,445	65,948	70,836
Germany	33,964	39,080	44,479	47,758	50,990	63,266	69,259	63,986	62,808	76,345	75,779	86,787	91,727	79,049	84,615	94,499	106,949
Greece	424	548	752	810	1,017	1,026	950	941	1,085	1,040	933	957	1,046	918	979	1,041	1,123
Hungary	723	901	1,075	1,194	1,367	1,836	2,216	2,096	2,104	2,358	2,324	2,640	2,831	2,419	2,663	3,143	3,544
Ireland	2,868	3,528	3,980	4,822	4,959	5,613	7,209	5,988	5,907	5,018	5,880	6,846	8,511	8,477	10,505	11,379	15,216
Italy	20,497	24,558	26,402	26,840	27,526	31,936	35,300	34,391	33,208	35,972	33,211	34,715	35,984	31,557	31,900	33,457	35,019
Netherlands	8,052	9,851	11,563	12,681	14,252	17,720	20,387	18,466	18,011	19,262	18,242	19,880	20,735	19,013	19,649	21,932	24,152
Poland	1,373	1,603	1,954	2,167	2,480	3,269	4,469	4,097	4,829	5,698	6,340	7,510	8,492	8,285	8,365	9,691	10,259
Portugal	846	1,054	1,226	1,325	1,498	1,804	2,114	2,141	2,126	2,308	2,142	2,323	2,470	2,129	2,291	2,440	2,630

TABLE S6-16

Value added of IT and other information services industry, by region, country, or economy: 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
Romania	378	499	541	705	976	1,553	1,897	1,535	1,402	1,724	1,676	2,173	2,176	2,043	2,261	2,496	2,826
Slovakia	161	241	358	421	567	971	1,251	1,501	1,489	1,827	1,958	1,940	1,834	1,711	1,822	2,065	2,290
Spain	8,494	10,986	12,668	13,541	14,974	17,837	20,726	20,307	18,563	20,431	19,457	21,125	22,171	19,150	19,941	21,755	24,297
Sweden	5,677	6,953	8,762	9,192	9,492	11,028	12,471	10,448	11,674	14,262	14,040	15,333	15,731	16,767	16,802	18,026	19,877
United Kingdom	31,712	39,083	50,862	52,115	57,113	65,684	63,829	51,971	53,395	60,931	60,091	61,923	68,300	66,106	64,614	66,808	73,154
Other Europe	11,022	12,334	14,220	16,503	18,575	23,427	29,582	27,570	31,160	38,553	43,129	44,111	41,356	34,347	34,460	38,331	39,599
Norway	2,302	2,556	3,141	3,668	3,846	5,020	5,987	5,427	6,162	7,217	7,368	7,986	7,570	6,154	6,354	6,850	7,450
Russia	1,450	1,809	1,756	2,666	3,792	5,893	8,797	7,226	8,709	12,673	16,503	15,867	13,519	8,755	8,221	9,953	10,291
Switzerland	6,280	6,700	7,685	7,934	8,263	8,757	10,357	10,790	11,840	14,112	14,046	14,706	15,203	14,999	15,312	16,179	16,698
Turkey	782	1,034	1,368	1,886	2,202	2,958	3,401	3,319	3,522	3,375	3,681	3,996	4,004	3,651	3,744	4,348	4,005
Ukraine	209	235	270	349	471	800	1,040	808	927	1,177	1,530	1,556	1,060	789	828	1,000	1,155
Middle East	5,188	5,563	6,426	7,377	8,626	10,957	13,426	13,774	14,907	16,938	16,405	17,262	19,183	20,291	21,725	23,438	22,910
Bahrain	68	73	83	96	108	124	139	139	152	144	150	154	165	172	182	192	213
Iran	1,223	1,480	1,793	2,139	2,721	3,742	4,530	4,743	5,292	6,061	4,612	3,558	4,022	4,202	4,550	4,841	3,444
Israel	1,966	1,912	2,111	2,446	2,664	3,138	4,093	4,225	4,450	5,194	5,160	6,102	6,719	7,216	8,075	9,158	9,603
Jordan	108	113	121	124	128	135	139	150	166	179	192	205	220	231	243	256	273
Kuwait	41	46	49	54	56	61	65	60	67	118	120	123	129	131	131	137	163
Qatar	26	28	53	66	163	248	312	320	320	411	438	527	606	623	632	633	708
Saudi Arabia	851	871	950	1,007	1,085	1,195	1,424	1,687	1,933	2,152	2,789	3,398	3,758	3,928	3,996	4,134	4,314
United Arab Emirates	905	1,040	1,266	1,446	1,702	2,313	2,724	2,450	2,528	2,680	2,944	3,193	3,563	3,789	3,916	4,086	4,191
Africa	1,852	2,402	3,443	4,557	6,033	7,886	10,389	11,621	12,042	11,522	12,516	13,804	13,988	12,962	11,046	9,790	11,411
Cameroon	61	77	88	96	106	118	136	138	140	157	153	160	163	140	158	160	180
Egypt	189	152	145	203	249	297	361	424	481	1,228	1,627	1,622	1,735	1,825	1,608	1,136	1,427
Kenya	79	90	90	103	123	143	151	144	133	105	116	112	103	128	142	150	158
Morocco	324	411	480	536	600	735	809	859	853	943	931	994	1,029	922	957	1,024	1,106
Nigeria	735	1,014	1,833	2,736	3,995	5,498	7,817	8,838	8,941	7,449	8,205	9,465	9,502	8,643	6,935	5,933	7,082
Senegal	49	62	71	76	84	103	123	118	117	131	125	136	141	117	119	136	154
South Africa	205	344	459	522	558	634	592	683	944	1,035	908	825	808	726	669	800	841
Tunisia	210	252	277	286	319	359	400	416	435	473	451	490	505	460	458	452	463
Zimbabwe	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Asia	121,184	131,300	141,153	151,411	159,395	177,944	209,131	221,495	244,192	276,777	302,894	305,077	324,406	324,371	339,781	367,021	421,955
Bangladesh	280	303	319	317	365	399	443	510	577	609	647	785	909	1,058	1,181	1,271	1,376
China	7,879	8,132	8,995	12,010	16,128	23,046	32,025	37,064	44,334	56,943	71,230	87,659	105,923	109,319	108,073	120,948	164,202
India	6,648	7,832	10,245	12,387	14,517	19,086	22,659	25,301	32,385	38,233	42,822	49,723	55,219	63,870	67,267	77,888	86,290
Indonesia	794	1,017	1,167	1,322	1,650	1,860	2,161	2,475	3,423	3,999	4,091	4,077	3,789	3,680	4,104	4,791	5,056
Japan	92,060	99,299	104,076	105,301	102,683	106,286	125,050	130,938	134,240	143,912	148,868	125,258	118,598	107,451	118,367	119,523	122,101

TABLE S6-16

Value added of IT and other information services industry, by region, country, or economy: 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
Malaysia	373	405	440	609	674	811	935	981	1,229	1,354	1,510	1,654	1,741	1,616	1,659	1,717	1,943
Pakistan	198	224	252	333	650	693	823	602	637	734	854	772	838	861	967	1,042	977
Philippines	489	508	554	633	769	956	1,148	1,153	1,336	1,521	1,773	1,665	1,699	1,801	2,194	2,278	2,366
Singapore	408	420	427	773	940	1,235	1,538	1,662	1,953	2,750	3,071	3,428	3,620	3,299	3,500	3,693	3,928
South Korea	8,792	9,658	10,838	13,599	16,372	18,289	16,536	15,428	18,081	20,223	21,167	22,771	24,690	23,983	24,898	25,282	24,599
Sri Lanka	5	5	5	6	7	9	10	11	12	14	14	18	22	27	29	33	35
Taiwan	2,371	2,486	2,670	2,871	3,190	3,617	3,954	3,740	3,998	4,154	4,305	4,497	4,614	4,560	4,658	5,239	5,399
Thailand	829	948	1,094	1,175	1,369	1,562	1,731	1,502	1,795	2,142	2,355	2,561	2,522	2,634	2,658	3,074	3,431
Vietnam	58	63	71	75	81	95	118	128	194	188	187	208	222	211	225	241	253
Oceania	7,749	9,931	12,076	13,218	14,498	18,549	21,163	21,589	26,455	31,223	32,707	31,486	31,285	26,145	25,551	26,992	27,313
Australia	7,007	8,959	10,951	11,979	13,386	17,154	19,799	20,332	25,007	29,603	30,950	29,629	29,344	24,453	23,886	25,283	25,565
New Zealand	743	972	1,125	1,239	1,112	1,395	1,364	1,257	1,448	1,620	1,757	1,857	1,941	1,692	1,665	1,709	1,749

EU = European Union.

Note(s):

Value added is the amount contributed by a country, firm, 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 or minor discrepancies. World total does not include all countries and economies due to limitations in data availability. See Table S6-1 for a full list of countries and economies in each region.

Source(s):

IHS Markit, special tabulations (2019) of Comparative Industry Service.

Science and Engineering Indicators

TABLE S6-17

Regions, countries, or economies in world trade data

(Regions, countries, or economies)

North America	Central and South America	Europe	Middle East	Asia	Oceania
Canada	Brazil	EU	Israel	China	Australia
Mexico	Other South America	Austria	Other Middle East	India	New Zealand
United States	Argentina	Belgium	Bahrain	Indonesia	
	Bahamas	Denmark	Iran	Japan	
	Bermuda	Finland	Iraq	Malaysia	
	Bolivia	France	Kuwait	Philippines	
	Barbados	Germany	Oman	Singapore	
	Chile	Ireland	Qatar	South Korea	
	Colombia	Italy	Saudi Arabia	Taiwan	
	Cuba	Netherlands	United Arab Emirates	Thailand	
	Dominican Republic	Poland		Vietnam	
	Ecuador	Spain		Other Asia	
	Grenada	Sweden		Armenia	
	Guyana	United Kingdom		Azerbaijan	
	Jamaica	Other EU		Bangladesh	
	Peru	Bulgaria		Brunei	
	Paraguay	Cyprus		Cambodia	
	Suriname	Czechia		Kazakhstan	
	Trinidad and Tobago	Greece		Kyrgyzstan	
	Uruguay	Hungary		Maldives	
	Venezuela	Malta		Mongolia	
		Portugal		Myanmar	
		Romania		Nepal	
		Slovakia		Pakistan	
		Slovenia		Papua New Guinea	
		Other Europe		Sri Lanka	
		Albania			
		Belarus			
		Bosnia and Herzegovina			
		Croatia			
		North Macedonia			
		Moldova			
		Montenegro			
		Norway			
		Russia			
		Serbia			
		Switzerland			
		Turkey			
		Ukraine			

EU = European Union.

Note(s):

China includes Hong Kong. China data exclude bilateral flows between mainland China and Hong Kong.

Source(s):

Oxford Economics, Global Trade Databank.

Science and Engineering Indicators

TABLE S6-18

Exports and imports of KTI products, by region, country, or economy: 2003–18

(Millions of current dollars)

Region, country, or economy	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Exports																
World	3,682,046	4,381,819	4,759,861	5,476,986	6,327,168	6,882,108	5,467,569	6,582,677	7,491,711	7,499,624	7,707,579	7,955,273	7,377,737	7,318,792	8,058,857	8,587,777
North America	682,686	724,253	791,863	958,898	1,038,112	1,092,118	811,948	995,146	1,103,316	1,161,313	1,173,856	1,219,851	1,190,195	1,154,174	1,208,122	1,271,837
Canada	116,412	132,666	146,036	154,486	164,118	153,984	114,289	136,887	151,913	159,442	155,629	159,694	156,394	154,222	153,638	159,903
Mexico	102,398	114,167	125,395	147,666	153,643	169,691	138,472	182,812	203,393	222,737	234,571	254,465	257,876	252,920	276,311	302,657
United States	463,877	477,420	520,433	656,746	720,352	768,444	559,187	675,447	748,009	779,135	783,657	805,691	775,924	747,032	778,173	809,276
Central and South America	35,093	47,966	59,828	68,172	77,118	91,249	64,943	81,668	97,899	97,635	102,253	88,280	78,370	78,145	84,641	86,990
Brazil	21,604	30,264	38,133	43,003	47,373	54,923	37,328	46,296	54,385	53,776	58,885	46,819	43,251	46,282	49,838	53,320
Other South America	13,489	17,702	21,694	25,169	29,745	36,325	27,615	35,372	43,514	43,859	43,368	41,461	35,119	31,864	34,803	33,670
Europe	1,813,698	2,171,954	2,351,330	2,662,515	3,064,109	3,333,831	2,602,041	2,922,902	3,391,267	3,247,513	3,396,782	3,498,982	3,142,633	3,183,234	3,474,972	3,670,623
EU	1,699,546	2,031,842	2,198,432	2,485,739	2,847,728	3,073,400	2,396,781	2,693,970	3,116,947	2,966,200	3,110,915	3,209,308	2,877,746	2,920,483	3,186,279	3,359,220
France	212,219	244,716	254,250	277,511	308,196	334,179	267,148	296,645	327,549	317,769	323,919	323,891	287,476	288,845	310,434	336,351
Germany	480,102	583,593	640,896	723,989	832,571	912,609	693,151	793,015	933,516	900,440	927,131	961,597	865,750	872,803	955,498	1,023,769
United Kingdom	173,008	191,942	212,137	265,835	232,637	231,981	170,326	206,481	233,883	228,605	232,152	257,715	245,504	234,405	244,669	252,759
Other EU	834,217	1,011,591	1,091,150	1,218,403	1,474,324	1,594,631	1,266,156	1,397,830	1,622,000	1,519,386	1,627,713	1,666,105	1,479,017	1,524,430	1,675,678	1,746,341
Other Europe	114,152	140,113	152,897	176,777	216,381	260,430	205,260	228,932	274,319	281,313	285,868	289,674	264,886	262,751	288,693	311,403
Middle East	30,761	38,904	50,405	58,934	71,683	94,943	91,966	105,983	125,094	172,695	185,055	191,201	135,106	124,140	168,774	118,985
Asia	1,104,632	1,381,599	1,486,935	1,708,564	2,052,441	2,243,988	1,875,983	2,453,060	2,746,902	2,791,836	2,822,795	2,930,735	2,807,744	2,755,412	3,098,464	3,414,081
China	224,497	309,473	393,984	492,916	616,870	734,192	630,884	832,703	966,711	1,006,277	1,046,073	1,131,056	1,112,836	1,062,585	1,196,151	1,344,673
India	12,610	16,657	22,390	27,800	33,283	45,663	46,106	56,161	73,956	74,970	86,541	86,735	80,286	81,089	91,088	108,297
Indonesia	13,230	15,606	18,167	19,336	21,746	24,363	22,022	27,936	33,499	33,607	33,307	33,226	28,459	29,609	31,468	34,055
Japan	361,672	428,498	443,211	478,985	526,688	563,901	409,211	550,007	580,870	570,598	504,076	487,092	442,567	461,925	495,660	525,116
Malaysia	65,394	76,758	85,146	93,680	97,246	78,161	83,457	100,892	104,241	102,475	103,477	108,466	99,911	97,876	112,396	132,323
Philippines	27,557	30,664	31,301	33,783	36,340	34,276	27,716	24,483	21,983	33,328	34,301	38,319	40,186	38,236	47,243	47,491
Singapore	118,120	145,250	93,518	105,711	199,794	205,351	171,926	222,036	242,229	243,346	245,373	245,687	229,379	221,756	238,478	258,710
South Korea	139,801	186,859	210,562	239,674	275,034	300,877	268,513	344,540	390,242	378,826	399,515	410,338	393,568	369,074	428,113	444,013
Taiwan	96,906	115,932	123,050	138,210	151,573	152,914	126,954	174,022	193,591	187,107	193,309	203,365	190,067	190,994	219,532	230,566
Thailand	40,675	50,012	58,531	69,290	81,470	88,695	74,951	100,012	109,403	116,972	120,748	123,839	117,062	118,613	130,870	140,001
Vietnam	2,108	3,009	3,716	5,027	6,682	8,927	8,808	13,536	21,981	34,808	47,206	53,268	65,095	75,070	98,392	139,106
Other Asia	2,063	2,882	3,357	4,151	5,715	6,668	5,435	6,731	8,196	9,520	8,870	9,344	8,328	8,588	9,073	9,730
Oceania	15,175	17,144	19,501	19,902	23,705	25,979	20,687	23,917	27,234	28,633	26,837	26,224	23,689	23,686	23,884	25,261
Australia	11,978	13,411	15,627	15,801	19,184	21,122	16,767	19,755	22,297	23,568	21,942	21,157	18,877	19,111	19,279	20,662
New Zealand	3,197	3,732	3,874	4,102	4,521	4,857	3,920	4,162	4,937	5,065	4,895	5,067	4,812	4,575	4,605	4,599
Imports																
World	3,703,624	4,469,760	4,880,034	5,504,770	6,333,692	6,895,537	5,507,083	6,677,689	7,621,829	7,652,564	7,864,312	8,093,094	7,580,769	7,669,407	8,416,032	9,046,200
North America	899,100	1,022,650	1,127,662	1,245,019	1,306,565	1,336,377	1,072,908	1,322,267	1,479,871	1,580,572	1,608,765	1,686,693	1,719,712	1,693,472	1,798,766	1,936,516

TABLE S6-18

Exports and imports of KTI products, by region, country, or economy: 2003–18

(Millions of current dollars)

Region, country, or economy	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Canada	141,738	158,417	178,039	196,414	211,180	212,874	170,245	207,303	231,678	242,152	243,453	244,673	231,921	225,689	241,819	254,837
Mexico	103,413	120,199	134,039	154,961	157,197	178,704	142,447	181,852	204,487	219,735	230,079	240,082	242,694	238,048	250,266	271,567
United States	653,949	744,034	815,585	893,644	938,187	944,799	760,216	933,112	1,043,706	1,118,686	1,135,233	1,201,939	1,245,097	1,229,734	1,306,682	1,410,112
Central and South America	78,339	104,230	132,770	158,546	191,571	264,750	206,019	269,029	333,808	342,947	348,244	326,015	283,998	245,723	263,567	290,441
Brazil	29,097	37,087	43,591	52,191	61,604	99,055	78,405	107,153	130,838	130,061	138,692	130,800	103,908	86,996	90,474	111,943
Other South America	49,242	67,144	89,179	106,354	129,967	165,695	127,613	161,876	202,970	212,886	209,552	195,214	180,090	158,727	173,093	178,498
Europe	1,667,979	2,026,985	2,200,399	2,506,930	2,928,323	3,175,085	2,395,962	2,759,088	3,177,279	2,970,182	3,074,194	3,172,083	2,850,239	2,918,901	3,217,383	3,388,499
EU	1,514,844	1,828,732	1,961,417	2,215,987	2,550,012	2,717,437	2,084,605	2,379,443	2,696,865	2,474,918	2,570,089	2,694,702	2,465,384	2,523,980	2,762,360	2,923,904
France	186,662	221,189	237,539	258,592	300,311	324,649	266,023	295,229	341,636	316,401	318,916	318,867	288,060	297,396	318,339	333,113
Germany	292,025	347,546	389,805	456,017	490,162	538,448	439,745	507,095	586,479	542,149	552,176	580,240	529,432	537,719	603,043	660,122
United Kingdom	212,313	251,784	256,650	293,886	311,690	294,976	196,734	267,833	295,418	270,733	282,970	327,966	313,533	305,647	312,036	319,750
Other EU	823,845	1,008,214	1,077,423	1,207,491	1,447,849	1,559,364	1,182,103	1,309,286	1,473,331	1,345,635	1,416,027	1,467,629	1,334,360	1,383,218	1,528,942	1,610,918
Other Europe	153,135	198,253	238,983	290,943	378,311	457,649	311,357	379,645	480,414	495,264	504,105	477,382	384,854	394,920	455,023	464,595
Middle East	92,730	114,938	130,227	135,437	194,597	241,762	209,621	222,426	253,428	309,186	334,747	360,270	307,616	286,138	408,700	367,299
Asia	903,964	1,125,202	1,204,176	1,370,169	1,608,230	1,760,282	1,527,161	1,987,676	2,246,124	2,304,565	2,365,013	2,415,953	2,297,488	2,405,019	2,586,377	2,921,626
China	320,538	411,181	461,791	539,101	622,355	662,951	605,712	812,610	924,552	931,076	989,131	1,025,738	950,900	1,045,171	1,061,236	1,207,510
India	22,104	29,623	42,615	57,891	69,763	100,547	87,224	100,132	121,065	125,896	122,948	125,407	129,888	127,740	148,820	209,790
Indonesia	13,978	19,931	23,458	24,292	29,385	59,069	47,886	64,143	78,787	87,758	80,921	75,928	67,389	65,326	72,796	87,205
Japan	140,882	165,605	178,380	193,060	204,946	222,576	183,483	232,011	264,303	275,216	264,509	268,841	249,292	253,361	269,921	294,840
Malaysia	57,844	70,142	75,299	83,300	90,420	79,549	75,560	97,896	103,213	105,580	108,166	109,317	95,791	95,097	108,037	119,344
Philippines	29,337	31,091	32,346	34,549	36,189	33,229	26,209	33,312	25,032	34,521	35,003	35,357	41,837	51,214	57,837	64,377
Singapore	89,475	113,650	71,116	84,945	155,351	166,766	133,351	166,855	177,674	183,481	183,691	180,253	166,666	165,584	180,276	203,690
South Korea	81,451	98,962	110,156	123,734	143,651	155,576	131,937	169,993	187,361	181,162	187,093	195,160	195,210	191,539	219,717	229,553
Taiwan	75,811	96,761	102,147	108,319	111,327	109,853	89,252	130,116	139,861	128,946	131,909	135,194	126,634	132,729	146,113	158,309
Thailand	41,668	49,274	57,353	60,398	66,586	77,039	63,911	85,043	99,520	115,984	111,389	104,387	99,365	99,253	107,863	115,348
Vietnam	11,645	13,516	14,711	17,371	26,522	33,147	32,586	37,732	47,154	55,637	68,189	75,315	91,073	96,979	120,857	132,970
Other Asia	19,231	25,467	34,805	43,207	51,736	59,979	50,048	57,834	77,603	79,307	82,064	85,055	83,442	81,027	92,905	98,689
Oceania	61,511	75,755	84,799	88,669	104,406	117,280	95,414	117,204	131,319	145,112	133,349	132,080	121,717	120,154	141,239	141,820
Australia	51,459	63,213	70,841	75,552	89,049	101,320	83,251	103,159	114,842	127,476	114,632	111,001	102,747	101,194	120,016	119,586
New Zealand	10,052	12,542	13,958	13,117	15,356	15,960	12,163	14,045	16,476	17,636	18,717	21,079	18,970	18,960	21,223	22,233

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

Note(s):

KTI products include high R&D intensive and medium-high R&D intensive products classified by the Organisation for Economic Co-operation and Development. High R&D intensive products include aircraft; pharmaceuticals; and computer, electronic, and optical products. Medium-high R&D intensive products include weapons and ammunition; motor vehicles; medical and dental instruments; machinery and equipment; chemicals and chemical products; electrical equipment; and railroad, military vehicles, and transport. Detail may not add to total because of rounding or minor discrepancies. World exports do not equal imports because of statistical errors in the reporting of trade data and the lack of trade data on sub-Saharan African countries. World total does not include all countries and economies due to limitations in data availability. China includes Hong Kong. China data exclude bilateral flows between mainland China and Hong Kong. See Table S6-17 for a full list of countries and economies in each region.

Source(s):

Oxford Economics, special tabulations (2019) of Global Trade Databank.

Science and Engineering Indicators

TABLE S6-19

Exports and imports of high R&D intensive products, by region, country, or economy: 2003–18

(Millions of current dollars)

Region, country, or economy	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Exports																
World	1,268,387	1,477,389	1,542,953	1,812,750	2,018,112	2,106,540	1,826,576	2,133,621	2,249,934	2,269,028	2,353,796	2,469,996	2,349,035	2,334,901	2,604,145	2,800,423
North America	231,207	218,725	231,168	317,614	333,976	346,145	252,640	285,833	290,905	298,060	297,194	313,346	311,673	306,651	311,275	321,486
Canada	20,337	22,170	25,505	28,745	31,937	30,528	27,440	26,498	27,037	26,329	25,964	29,207	29,347	27,570	25,293	27,744
Mexico	32,940	38,137	40,159	48,736	49,480	58,868	51,447	62,979	62,712	66,611	66,384	68,653	66,804	64,711	69,912	73,211
United States	177,930	158,418	165,504	240,133	252,559	256,749	173,753	196,355	201,157	205,121	204,846	215,487	215,523	214,371	216,069	220,531
Central and South America	6,120	7,576	9,893	10,903	11,634	13,589	11,043	11,338	12,203	12,179	11,359	10,364	10,828	10,426	10,027	9,124
Brazil	4,505	5,808	7,549	8,103	8,575	10,156	7,719	7,804	7,764	8,218	7,198	6,638	6,792	6,835	6,233	6,283
Other South America	1,616	1,768	2,345	2,800	3,058	3,433	3,323	3,534	4,440	3,961	4,161	3,727	4,036	3,590	3,794	2,841
Europe	488,776	588,260	640,793	739,452	767,606	821,228	732,220	803,190	864,200	837,346	866,390	908,232	835,067	849,655	914,446	960,986
EU	456,570	549,704	601,259	693,357	714,477	759,261	671,366	737,897	788,446	758,517	783,691	819,009	749,431	758,428	821,068	862,083
France	61,983	71,149	75,934	86,679	88,595	99,345	90,851	106,076	112,344	115,901	119,578	117,675	107,019	105,994	107,447	112,677
Germany	98,034	127,932	138,674	156,498	172,293	183,643	162,687	173,643	189,330	191,112	195,146	203,446	192,519	194,286	212,010	230,931
United Kingdom	57,397	60,644	74,235	112,630	60,848	61,499	45,428	59,819	61,592	58,446	55,822	73,962	76,034	73,618	75,130	71,833
Other EU	239,157	289,978	312,416	337,550	392,741	414,774	372,399	398,359	425,181	393,059	413,145	423,927	373,859	384,529	426,481	446,642
Other Europe	32,206	38,557	39,533	46,095	53,129	61,967	60,854	65,292	75,754	78,828	82,699	89,223	85,636	91,227	93,378	98,903
Middle East	9,086	10,740	13,413	14,350	14,339	20,926	23,510	25,403	25,759	48,166	58,334	57,475	33,102	29,333	49,929	21,871
Asia	529,140	647,350	642,190	724,610	883,824	897,330	800,744	1,000,623	1,048,425	1,064,381	1,112,409	1,172,828	1,151,494	1,131,262	1,310,621	1,478,080
China	129,496	181,093	227,748	277,129	327,571	365,217	328,397	421,177	458,396	475,462	495,444	535,221	525,420	503,451	576,704	647,796
India	2,952	3,469	4,003	4,911	6,438	9,342	12,831	12,783	18,529	18,323	22,944	22,960	20,270	20,153	19,382	21,948
Indonesia	5,759	6,801	7,034	6,514	5,732	6,198	6,673	8,512	8,662	8,541	7,478	7,071	6,330	5,706	5,952	6,147
Japan	96,957	109,660	105,526	107,769	112,405	112,980	88,527	102,957	98,389	94,124	81,787	77,953	72,776	73,026	78,516	79,804
Malaysia	50,156	56,738	60,860	68,538	69,630	48,969	58,751	68,406	67,787	63,824	64,476	67,322	61,005	59,697	71,811	87,743
Philippines	23,883	24,231	24,169	26,423	29,221	25,984	20,465	15,958	13,197	19,024	20,795	23,540	26,307	26,235	26,168	27,606
Singapore	79,089	95,010	39,897	45,888	129,953	130,023	106,690	138,152	136,503	136,544	142,357	140,964	133,603	126,778	135,407	141,086
South Korea	64,843	83,625	84,187	85,328	94,666	90,476	79,772	99,806	99,021	93,517	106,446	113,467	115,394	111,685	152,184	186,540
Taiwan	54,327	62,655	61,749	68,697	71,025	69,253	63,480	88,925	99,208	94,724	100,214	109,019	105,824	112,767	130,426	132,473
Thailand	20,542	22,448	25,127	30,889	34,132	34,298	31,067	37,548	36,520	37,901	36,789	37,247	35,757	35,059	40,504	41,278
Vietnam	748	1,097	1,371	1,737	1,959	3,385	3,580	5,785	11,388	21,045	32,516	36,214	47,702	55,490	72,353	104,479
Other Asia	389	523	519	788	1,092	1,205	511	614	824	1,350	1,162	1,849	1,106	1,214	1,215	1,180
Oceania	4,059	4,737	5,496	5,821	6,732	7,323	6,418	7,235	8,441	8,896	8,110	7,750	6,871	7,575	7,847	8,876
Australia	3,573	4,081	4,752	4,877	5,911	6,425	5,655	6,495	7,525	8,087	7,322	6,967	6,047	6,751	6,915	7,968
New Zealand	485	656	744	944	821	897	763	740	916	809	788	783	824	824	932	908
Imports																
World	1,294,779	1,566,523	1,674,045	1,897,877	2,113,421	2,228,809	1,956,315	2,362,493	2,513,136	2,554,196	2,654,132	2,748,323	2,636,896	2,724,379	2,989,921	3,208,784
North America	296,376	343,544	376,067	416,100	434,589	453,797	415,392	490,747	519,251	528,394	536,002	558,461	577,412	569,810	611,007	655,781

TABLE S6-19

Exports and imports of high R&D intensive products, by region, country, or economy: 2003–18

(Millions of current dollars)

Region, country, or economy	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Canada	31,212	36,151	41,454	45,180	49,688	51,474	45,378	51,857	56,440	54,096	54,508	54,293	52,547	49,166	53,549	57,126
Mexico	30,738	37,481	39,401	46,499	39,219	53,390	49,495	62,530	65,766	66,997	70,406	70,452	69,958	67,639	66,371	73,905
United States	234,425	269,912	295,213	324,421	345,682	348,932	320,520	376,359	397,045	407,300	411,088	433,716	454,906	453,005	491,086	524,751
Central and South America	19,094	26,174	34,357	42,705	43,531	63,266	53,488	67,108	77,939	80,752	82,250	82,218	71,337	60,434	65,358	67,092
Brazil	7,540	10,140	12,437	15,671	12,061	24,722	20,202	27,391	30,891	31,324	33,090	32,255	24,935	21,245	24,596	26,967
Other South America	11,554	16,034	21,919	27,033	31,470	38,543	33,286	39,717	47,049	49,427	49,160	49,963	46,401	39,189	40,762	40,125
Europe	515,426	637,514	690,149	789,196	859,921	916,137	769,778	906,329	948,276	891,988	906,912	952,902	865,668	879,352	942,817	977,656
EU	473,806	584,587	627,854	713,358	768,384	812,920	682,880	802,543	830,949	771,076	783,305	826,790	760,891	765,761	814,520	847,321
France	53,852	65,293	69,959	79,606	84,231	89,567	84,470	99,950	109,660	105,629	104,354	104,949	95,855	98,124	91,166	91,242
Germany	100,296	124,111	139,977	161,957	163,556	173,399	157,540	179,937	186,842	168,542	168,444	178,421	166,062	162,824	181,573	193,635
United Kingdom	68,260	82,854	84,460	103,088	91,200	89,311	47,584	85,633	88,065	80,382	82,310	107,728	103,846	101,635	100,205	98,719
Other EU	251,398	312,328	333,458	368,707	429,396	460,643	393,286	437,022	446,383	416,523	428,197	435,692	395,127	403,177	441,576	463,725
Other Europe	41,620	52,927	62,295	75,838	91,538	103,217	86,898	103,787	117,326	120,912	123,607	126,112	104,777	113,591	128,297	130,335
Middle East	20,864	25,860	29,758	29,824	38,559	47,099	44,986	48,621	58,206	86,529	96,758	106,123	82,013	81,574	168,342	151,887
Asia	422,880	508,419	516,500	591,383	704,776	714,629	643,112	814,410	868,976	927,212	995,492	1,011,852	1,005,709	1,098,062	1,163,852	1,315,090
China	142,895	179,774	211,327	251,633	283,527	285,752	264,865	344,171	374,239	409,051	459,702	468,164	465,812	551,167	538,405	626,889
India	7,645	9,720	13,244	19,582	20,592	27,492	26,505	27,551	30,868	31,012	32,722	34,163	39,381	38,851	50,685	63,457
Indonesia	1,507	2,402	2,903	3,458	5,682	14,197	12,301	15,632	17,236	18,752	15,678	14,041	12,857	12,995	14,971	17,084
Japan	66,243	76,890	81,543	83,957	86,547	91,015	82,662	106,352	114,711	124,627	121,991	121,982	112,973	113,659	118,237	125,451
Malaysia	35,839	41,693	43,817	48,519	50,807	37,382	39,209	50,898	51,599	49,971	52,261	53,555	45,629	44,818	52,685	59,038
Philippines	20,908	22,283	22,978	24,496	25,902	21,560	16,179	19,875	9,811	18,437	18,946	17,759	21,967	23,931	26,545	31,296
Singapore	56,563	71,725	26,798	33,618	95,378	98,417	77,870	96,737	97,702	99,213	102,504	100,088	95,143	93,103	103,580	115,222
South Korea	34,399	38,462	41,442	46,078	52,081	54,015	45,937	55,620	60,750	56,759	59,712	66,884	71,842	72,820	79,872	86,830
Taiwan	34,569	39,329	41,351	44,341	43,725	42,935	38,163	49,883	53,401	50,291	52,738	55,529	53,583	57,771	68,632	75,885
Thailand	16,357	18,506	21,281	23,027	24,443	24,700	22,883	27,707	30,634	33,665	35,046	33,912	33,437	32,442	37,547	39,275
Vietnam	2,463	3,067	3,124	3,837	6,075	7,036	8,035	9,359	13,355	21,441	29,070	30,407	38,172	41,759	54,562	56,093
Other Asia	3,492	4,569	6,693	8,838	10,018	10,127	8,502	10,625	14,671	13,993	15,121	15,367	14,911	14,745	18,132	18,571
Oceania	20,139	25,011	27,214	28,669	32,044	33,881	29,559	35,278	40,488	39,321	36,718	36,768	34,758	35,146	38,545	41,278
Australia	17,410	21,549	23,131	24,512	27,868	29,660	25,532	31,244	35,495	34,714	31,943	31,165	29,520	30,289	33,671	36,052
New Zealand	2,730	3,462	4,082	4,157	4,176	4,221	4,027	4,034	4,994	4,607	4,776	5,603	5,238	4,858	4,874	5,226

EU = European Union.

Note(s):

High R&D intensive products include aircraft; pharmaceuticals; and computer, electronic, and optical products classified by the Organisation for Economic Co-operation and Development. Detail may not add to total because of rounding or minor discrepancies. World exports do not equal imports because of statistical errors in the reporting of trade data and the lack of trade data on sub-Saharan African countries. World total does not include all countries and economies due to limitations in data availability. China includes Hong Kong. China data exclude bilateral flows between mainland China and Hong Kong. See Table S6-17 for a full list of countries and economies in each region.

Source(s):

Oxford Economics, special tabulations (2019) of Global Trade Databank.

Science and Engineering Indicators

TABLE S6-20

Exports and imports of medium-high R&D intensive products, by region, country, or economy: 2003–18

(Millions of current dollars)

Region, country, or economy	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Exports																
World	2,413,659	2,904,431	3,216,908	3,664,236	4,309,057	4,775,568	3,640,993	4,449,056	5,241,777	5,230,597	5,353,783	5,485,277	5,028,702	4,983,891	5,454,712	5,787,353
North America	451,479	505,529	560,695	641,284	704,136	745,974	559,308	709,313	812,411	863,253	876,662	906,505	878,521	847,523	896,847	950,350
Canada	96,075	110,496	120,531	125,741	132,181	123,456	86,849	110,389	124,877	133,114	129,664	130,488	127,048	126,652	128,345	132,159
Mexico	69,458	76,030	85,236	98,930	104,162	110,823	87,025	119,833	140,681	156,126	168,187	185,812	191,072	188,210	206,398	229,446
United States	285,947	319,002	354,929	416,613	467,793	511,695	385,434	479,091	546,853	574,014	578,811	590,205	560,401	532,661	562,103	588,745
Central and South America	28,973	40,390	49,934	57,269	65,484	77,660	53,900	70,331	85,695	85,456	90,894	77,916	67,542	67,719	74,614	77,867
Brazil	17,100	24,456	30,585	34,900	38,797	44,768	29,609	38,493	46,621	45,558	51,687	40,181	36,459	39,446	43,605	47,037
Other South America	11,873	15,934	19,349	22,369	26,687	32,892	24,292	31,838	39,074	39,898	39,207	37,735	31,082	28,273	31,009	30,829
Europe	1,324,922	1,583,694	1,710,537	1,923,064	2,296,502	2,512,603	1,869,821	2,119,712	2,527,067	2,410,167	2,530,392	2,590,751	2,307,565	2,333,579	2,560,526	2,709,637
EU	1,242,975	1,482,138	1,597,173	1,792,381	2,133,250	2,314,139	1,725,415	1,956,072	2,328,501	2,207,682	2,327,224	2,390,299	2,128,315	2,162,055	2,365,211	2,497,137
France	150,237	173,566	178,316	190,832	219,600	234,835	176,297	190,569	215,205	201,867	204,340	206,216	180,457	182,851	202,987	223,674
Germany	382,067	455,661	502,222	567,491	660,278	728,966	530,463	619,372	744,186	709,328	731,985	758,152	673,231	678,517	743,488	792,838
United Kingdom	115,611	131,297	137,901	153,205	171,789	170,482	124,898	146,661	172,291	170,159	176,330	183,753	169,470	160,787	169,539	180,926
Other EU	595,060	721,613	778,734	880,853	1,081,583	1,179,857	893,757	999,470	1,196,819	1,126,327	1,214,568	1,242,178	1,105,157	1,139,900	1,249,197	1,299,699
Other Europe	81,947	101,556	113,364	130,682	163,252	198,464	144,406	163,640	198,565	202,485	203,169	200,452	179,250	171,524	195,315	212,500
Middle East	21,675	28,163	36,992	44,584	57,344	74,017	68,456	80,580	99,335	124,529	126,721	133,726	102,005	94,807	118,845	97,114
Asia	575,493	734,249	844,745	983,954	1,168,617	1,346,658	1,075,238	1,452,437	1,698,477	1,727,455	1,710,386	1,757,906	1,656,251	1,624,150	1,787,843	1,936,001
China	95,001	128,379	166,236	215,787	289,299	368,975	302,487	411,527	508,315	530,814	550,629	595,834	587,416	559,134	619,447	696,878
India	9,658	13,188	18,388	22,889	26,845	36,321	33,275	43,378	55,427	56,647	63,597	63,775	60,016	60,935	71,706	86,349
Indonesia	7,471	8,805	11,133	12,821	16,014	18,165	15,349	19,424	24,836	25,066	25,829	26,155	22,129	23,903	25,516	27,908
Japan	264,715	318,838	337,684	371,215	414,283	450,921	320,684	447,050	482,481	476,474	422,288	409,140	369,791	388,899	417,144	445,311
Malaysia	15,238	20,020	24,286	25,142	27,616	29,192	24,706	32,486	36,455	38,651	39,001	41,144	38,906	38,179	40,585	44,580
Philippines	3,673	6,433	7,132	7,361	7,118	8,293	7,251	8,525	8,786	14,303	13,506	14,779	13,879	12,001	21,074	19,885
Singapore	39,031	50,240	53,622	59,823	69,841	75,328	65,236	83,884	105,726	106,802	103,015	104,723	95,776	94,978	103,071	117,624
South Korea	74,958	103,234	126,376	154,347	180,367	210,401	188,741	244,734	291,222	285,309	293,068	296,871	278,174	257,388	275,928	257,473
Taiwan	42,579	53,277	61,301	69,513	80,549	83,661	63,474	85,097	94,383	92,383	93,096	94,346	84,243	78,227	89,106	98,093
Thailand	20,133	27,564	33,404	38,402	47,338	54,398	43,884	62,463	72,883	79,072	83,959	86,592	81,306	83,554	90,366	98,722
Vietnam	1,360	1,912	2,345	3,290	4,723	5,542	5,228	7,751	10,592	13,764	14,690	17,053	17,393	19,580	26,039	34,627
Other Asia	1,675	2,359	2,839	3,364	4,623	5,463	4,924	6,117	7,371	8,170	7,707	7,495	7,222	7,373	7,858	8,550
Oceania	11,117	12,407	14,005	14,081	16,973	18,657	14,269	16,682	18,793	19,737	18,727	18,474	16,818	16,112	16,038	16,385
Australia	8,405	9,330	10,875	10,924	13,273	14,697	11,112	13,260	14,772	15,481	14,620	14,190	12,830	12,360	12,364	12,694
New Zealand	2,712	3,076	3,130	3,157	3,700	3,960	3,157	3,422	4,021	4,256	4,107	4,284	3,989	3,752	3,673	3,691
Imports																
World	2,408,845	2,903,237	3,205,990	3,606,893	4,220,271	4,666,728	3,550,768	4,315,196	5,108,693	5,098,368	5,210,180	5,344,771	4,943,873	4,945,029	5,426,112	5,837,416
North America	602,724	679,105	751,595	828,919	871,976	882,580	657,515	831,520	960,620	1,052,178	1,072,764	1,128,233	1,142,301	1,123,662	1,187,759	1,280,735

TABLE S6-20

Exports and imports of medium-high R&D intensive products, by region, country, or economy: 2003–18

(Millions of current dollars)

Region, country, or economy	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Canada	110,526	122,266	136,585	151,234	161,493	161,399	124,867	155,446	175,238	188,055	188,945	190,381	179,374	176,524	188,270	197,711
Mexico	72,675	82,718	94,638	108,462	117,978	125,313	92,952	119,322	138,721	152,737	159,673	169,630	172,736	170,409	183,894	197,663
United States	419,524	474,122	520,372	569,222	592,505	595,867	439,696	556,752	646,661	711,386	724,145	768,222	790,191	776,729	815,595	885,361
Central and South America	59,245	78,056	98,413	115,841	148,041	201,484	152,531	201,921	255,869	262,196	265,993	243,797	212,661	185,289	198,208	223,349
Brazil	21,557	26,947	31,153	36,520	49,543	74,332	58,204	79,762	99,947	98,737	105,602	98,545	78,972	65,751	65,877	84,977
Other South America	37,688	51,110	67,260	79,321	98,498	127,152	94,327	122,159	155,921	163,459	160,391	145,251	133,689	119,538	132,331	138,372
Europe	1,152,553	1,389,471	1,510,250	1,717,734	2,068,402	2,258,948	1,626,184	1,852,758	2,229,004	2,078,193	2,167,282	2,219,181	1,984,571	2,039,549	2,274,566	2,410,843
EU	1,041,038	1,244,146	1,333,563	1,502,629	1,781,629	1,904,516	1,401,724	1,576,900	1,865,915	1,703,842	1,786,784	1,867,912	1,704,494	1,758,220	1,947,840	2,076,583
France	132,809	155,896	167,581	178,986	216,080	235,082	181,553	195,279	231,976	210,773	214,562	213,917	192,205	199,272	227,173	241,870
Germany	191,728	223,435	249,829	294,060	326,606	365,049	282,205	327,157	399,638	373,606	383,731	401,820	363,369	374,895	421,470	466,488
United Kingdom	144,053	168,930	172,189	190,798	220,490	205,665	149,150	182,200	207,354	190,351	200,660	220,237	209,687	204,012	211,831	221,031
Other EU	572,447	695,885	743,965	838,784	1,018,453	1,098,720	788,816	872,264	1,026,948	929,112	987,830	1,031,937	939,233	980,040	1,087,366	1,147,194
Other Europe	111,515	145,325	176,687	215,105	286,773	354,432	224,459	275,858	363,088	374,351	380,498	351,269	280,077	281,329	326,726	334,260
Middle East	71,867	89,078	100,469	105,613	156,037	194,664	164,635	173,805	195,222	222,657	237,989	254,147	225,602	204,563	240,359	215,412
Asia	481,084	616,782	687,676	778,786	903,454	1,045,654	884,049	1,173,266	1,377,148	1,377,353	1,369,522	1,404,101	1,291,779	1,306,958	1,422,525	1,606,536
China	177,642	231,407	250,464	287,468	338,828	377,199	340,847	468,439	550,313	522,025	529,428	557,574	485,088	494,003	522,831	580,621
India	14,458	19,902	29,370	38,309	49,171	73,055	60,718	72,581	90,198	94,884	90,226	91,245	90,507	88,889	98,134	146,333
Indonesia	12,471	17,529	20,555	20,834	23,702	44,872	35,585	48,510	61,551	69,006	65,242	61,887	54,532	52,331	57,825	70,121
Japan	74,639	88,715	96,837	109,103	118,399	131,561	100,822	125,659	149,592	150,589	142,518	146,859	136,319	139,701	151,683	169,389
Malaysia	22,005	28,449	31,482	34,781	39,613	42,167	36,351	46,997	51,614	55,610	55,905	55,762	50,162	50,279	55,352	60,306
Philippines	8,429	8,808	9,368	10,053	10,287	11,669	10,031	13,437	15,220	16,084	16,057	17,598	19,869	27,283	31,292	33,081
Singapore	32,912	41,924	44,319	51,327	59,973	68,349	55,482	70,117	79,972	84,268	81,188	80,164	71,523	72,481	76,696	88,468
South Korea	47,051	60,499	68,714	77,656	91,570	101,561	86,000	114,374	126,612	124,403	127,381	128,276	123,368	118,719	139,845	142,724
Taiwan	41,242	57,432	60,796	63,978	67,603	66,918	51,089	80,233	86,460	78,655	79,171	79,664	73,051	74,957	77,481	82,424
Thailand	25,312	30,769	36,072	37,372	42,143	52,339	41,029	57,336	68,886	82,319	76,343	70,475	65,928	66,811	70,317	76,073
Vietnam	9,182	10,449	11,587	13,534	20,448	26,111	24,551	28,373	33,799	34,195	39,119	44,908	52,901	55,219	66,296	76,877
Other Asia	15,739	20,898	28,111	34,369	41,717	49,853	41,546	47,209	62,932	65,314	66,943	69,688	68,531	66,282	74,773	80,118
Oceania	41,372	50,744	57,586	60,000	72,361	83,399	65,854	81,925	90,830	105,791	96,630	95,312	86,959	85,008	102,695	100,541
Australia	34,050	41,664	47,710	51,040	61,181	71,659	57,718	71,915	79,347	92,762	82,689	79,836	73,227	70,905	86,345	83,534
New Zealand	7,322	9,080	9,876	8,960	11,180	11,739	8,136	10,011	11,483	13,030	13,941	15,476	13,732	14,102	16,350	17,007

EU = European Union.

Note(s):

Medium-high R&D intensive products include weapons and ammunition; motor vehicles; medical and dental instruments; machinery and equipment; chemicals and chemical products; electrical equipment; and railroad, military vehicles, and transport classified by the Organisation for Economic Co-operation and Development. Detail may not add to total because of rounding or minor discrepancies. World exports do not equal imports because of statistical errors in the reporting of trade data and the lack of trade data on sub-Saharan African countries. World total does not include all countries and economies due to limitations in data availability. China includes Hong Kong. China data exclude bilateral flows between mainland China and Hong Kong. See Table S6-17 for a full list of countries and economies in each region.

Source(s):

Oxford Economics, special tabulations (2019) of Global Trade Databank.

Science and Engineering Indicators