

Table 1.1. Real Gross Domestic Product and Real Gross Domestic Product With R&D Treated as Investment, 1959–2004

	1959	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	
	Millions of chained (2000) dollars											
GDP (from the NIPAs).....	2,441,284	2,501,756	2,559,971	2,715,177	2,833,963	2,998,593	3,191,104	3,399,126	3,484,631	3,652,698	3,765,397	
GDP less the R&D software double-count ¹	2,442,239	2,502,815	2,561,038	2,716,300	2,835,099	2,999,770	3,192,378	3,400,472	3,485,944	3,654,145	3,766,866	
Adjusted GDP, with R&D adjusted by: ²												
Input cost index.....	2,501,062	2,568,459	2,633,224	2,797,162	2,921,026	3,095,387	3,297,779	3,513,732	3,606,023	3,780,383	3,897,265	
Aggregate output price index.....	2,437,579	2,503,997	2,567,992	2,729,596	2,851,631	3,023,531	3,223,289	3,436,977	3,529,539	3,703,659	3,822,565	
	Percent increase in GDP (net effect of all adjustments)											
Input cost index.....	2.4	2.7	2.9	3.0	3.1	3.2	3.3	3.4	3.5	3.5	3.5	
Aggregate output price index.....	-0.2	0.1	0.3	0.5	0.6	0.8	1.0	1.1	1.3	1.4	1.5	
	Percent increase in GDP less the R&D software double-count											
Input cost index.....	2.4	2.6	2.8	3.0	3.0	3.2	3.3	3.3	3.4	3.5	3.5	
Aggregate output price index.....	-0.2	0.0	0.3	0.5	0.6	0.8	1.0	1.1	1.3	1.4	1.5	
	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	
	Millions of chained (2000) dollars											
GDP (from the NIPAs).....	3,771,876	3,898,613	4,104,966	4,341,456	4,319,565	4,311,220	4,540,937	4,750,529	5,014,999	5,173,444	5,161,664	
GDP less the R&D software double-count ¹	3,773,336	3,900,172	4,106,600	4,343,217	4,321,261	4,312,930	4,542,784	4,752,446	5,016,019	5,173,732	5,161,283	
Adjusted GDP, with R&D adjusted by: ²												
Input cost index.....	3,901,819	4,029,629	4,239,308	4,478,940	4,454,856	4,444,331	4,676,374	4,888,481	5,156,651	5,317,957	5,309,659	
Aggregate output price index.....	3,830,236	3,958,429	4,168,887	4,410,132	4,385,301	4,371,977	4,600,906	4,810,658	5,075,219	5,233,896	5,223,196	
	Percent increase in GDP (net effect of all adjustments)											
Input cost index.....	3.4	3.4	3.3	3.2	3.1	3.1	3.0	2.9	2.8	2.8	2.9	
Aggregate output price index.....	1.5	1.5	1.6	1.6	1.5	1.4	1.3	1.3	1.2	1.2	1.2	
	Percent increase in GDP less the R&D software double-count											
Input cost index.....	3.4	3.3	3.2	3.1	3.1	3.0	2.9	2.9	2.8	2.8	2.9	
Aggregate output price index.....	1.5	1.5	1.5	1.5	1.5	1.4	1.3	1.2	1.2	1.2	1.2	
	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992
	Millions of chained (2000) dollars											
GDP (from the NIPAs).....	5,291,739	5,189,250	5,423,777	5,813,609	6,053,732	6,263,619	6,475,076	6,742,687	6,981,436	7,112,492	7,100,516	7,336,614
GDP less the R&D software double-count ¹	5,290,766	5,187,748	5,421,817	5,811,149	6,050,805	6,260,173	6,471,110	6,738,309	6,976,593	7,107,252	7,094,902	7,330,245
Adjusted GDP, with R&D adjusted by: ²												
Input cost index.....	5,445,566	5,347,507	5,590,175	5,993,644	6,242,991	6,458,842	6,673,985	6,950,453	7,197,372	7,331,355	7,327,409	7,565,827
Aggregate output price index.....	5,353,610	5,255,396	5,493,208	5,888,183	6,132,860	6,344,630	6,557,006	6,831,157	7,078,256	7,216,037	7,215,533	7,457,585
	Percent increase in GDP (net effect of all adjustments)											
Input cost index.....	2.9	3.0	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.2	3.1
Aggregate output price index.....	1.2	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.4	1.5	1.6
	Percent increase in GDP less the R&D software double-count											
Input cost index.....	2.9	3.1	3.1	3.1	3.2	3.2	3.1	3.1	3.2	3.2	3.3	3.2
Aggregate output price index.....	1.2	1.3	1.3	1.3	1.4	1.3	1.3	1.4	1.5	1.5	1.7	1.7
	1993	1994	1995	1996	1997	1998	1999	2000 ³	2001	2002	2003	2004
	Millions of chained (2000) dollars											
GDP (from the NIPAs).....	7,532,658	7,835,512	8,031,655	8,328,913	8,703,528	9,066,854	9,470,332	9,816,969	9,890,694	10,048,846	10,301,044	10,675,757
GDP less the R&D software double-count ¹	7,525,989	7,828,279	8,024,121	8,320,824	8,695,061	9,057,534	9,457,550	9,801,890	9,875,404	10,025,177	10,274,635	10,642,304
Adjusted GDP, with R&D adjusted by: ²												
Input cost index.....	7,760,730	8,065,938	8,274,908	8,584,467	8,972,453	9,344,753	9,759,961	10,119,612	10,187,717	10,324,939	10,577,626	10,950,533
Aggregate output price index.....	7,655,425	7,962,079	8,177,483	8,499,378	8,900,611	9,289,327	9,718,520	10,093,913	10,180,317	10,330,918	10,596,792	10,983,691
	Percent increase in GDP (net effect of all adjustments)											
Input cost index.....	3.0	2.9	3.0	3.1	3.1	3.1	3.1	3.1	3.0	2.7	2.7	2.6
Aggregate output price index.....	1.6	1.6	1.8	2.0	2.3	2.5	2.6	2.8	2.9	2.8	2.9	2.9
	Percent increase in GDP less the R&D software double-count											
Input cost index.....	3.1	3.0	3.1	3.2	3.2	3.2	3.2	3.2	3.2	3.0	2.9	2.9
Aggregate output price index.....	1.7	1.7	1.9	2.1	2.4	2.6	2.8	2.8	3.0	3.1	3.0	3.1

GDP Gross domestic product
NIPAs National income and product accounts
R&D Research and development

1. GDP is adjusted to remove the double-count of R&D software investment that is also included in R&D investment.

2. Adjusted GDP incorporates the impact of treating R&D as investment and the removal of the R&D software investment double-count.

3. The 2000 chained-dollar values do not match the 2000 current-dollar values, because of rounding adjustments.

NOTE: Percent increase is the adjustment to GDP calculated as a percent of unadjusted GDP from the NIPAs.

Table 1.2. Gross Domestic Product and Gross Domestic Product With R&D Treated as Investment, 1959–2004

	1959	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	
	Millions of dollars											
GDP (from the NIPAs).....	506,585	526,398	544,716	585,627	617,740	663,615	719,119	787,788	832,596	909,989	984,602	
GDP less the R&D software double-count ¹	506,585	526,398	544,716	585,627	617,740	663,615	719,119	787,788	832,596	909,989	984,602	
Adjusted GDP (with CFC adjusted by): ²												
Input cost index.....	517,359	538,617	558,517	601,371	634,908	683,266	741,476	812,663	859,985	940,224	1,017,519	
Aggregate output price index.....	517,685	538,917	558,545	601,063	634,760	682,704	740,601	811,667	858,671	938,556	1,015,266	
	Percent increase in GDP (net effect of all adjustments)											
Input cost index.....	2.1	2.3	2.5	2.7	2.8	3.0	3.1	3.2	3.3	3.3	3.3	
Aggregate output price index.....	2.2	2.4	2.5	2.6	2.8	2.9	3.0	3.0	3.1	3.1	3.1	
	Percent increase in GDP less the R&D software double-count											
Input cost index.....	2.1	2.3	2.5	2.7	2.8	3.0	3.1	3.2	3.3	3.3	3.3	
Aggregate output price index.....	2.2	2.4	2.5	2.6	2.8	2.9	3.0	3.0	3.1	3.1	3.1	
	Millions of dollars											
	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	
	Millions of dollars											
GDP (from the NIPAs).....	1,038,545	1,127,118	1,238,292	1,382,704	1,499,978	1,638,339	1,825,267	2,030,945	2,294,706	2,563,326	2,789,504	
GDP less the R&D software double-count ¹	1,038,545	1,127,118	1,238,292	1,382,704	1,499,978	1,638,339	1,825,267	2,030,945	2,294,706	2,562,547	2,788,335	
Adjusted GDP (with CFC adjusted by): ²												
Input cost index.....	1,072,889	1,163,779	1,278,013	1,425,603	1,545,899	1,687,851	1,878,510	2,088,812	2,358,056	2,633,181	2,867,895	
Aggregate output price index.....	1,070,456	1,160,958	1,274,151	1,421,438	1,543,337	1,686,720	1,877,544	2,087,663	2,357,266	2,633,128	2,868,947	
	Percent increase in GDP (net effect of all adjustments)											
Input cost index.....	3.3	3.3	3.2	3.1	3.1	3.0	2.9	2.8	2.8	2.7	2.8	
Aggregate output price index.....	3.1	3.0	2.9	2.8	2.9	3.0	2.9	2.8	2.7	2.7	2.8	
	Percent increase in GDP less the R&D software double-count											
Input cost index.....	3.3	3.3	3.2	3.1	3.1	3.0	2.9	2.8	2.8	2.8	2.9	
Aggregate output price index.....	3.1	3.0	2.9	2.8	2.9	3.0	2.9	2.8	2.7	2.8	2.9	
	Millions of dollars											
	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992
	Millions of dollars											
GDP (from the NIPAs).....	3,128,435	3,255,011	3,536,665	3,933,173	4,220,262	4,462,825	4,739,471	5,103,791	5,484,350	5,803,067	5,995,926	6,337,744
GDP less the R&D software double-count ¹	3,126,876	3,253,063	3,534,327	3,930,445	4,217,144	4,459,318	4,735,574	5,099,504	5,479,674	5,798,001	5,990,470	6,331,899
Adjusted GDP (with CFC adjusted by): ²												
Input cost index.....	3,217,480	3,352,465	3,643,399	4,053,154	4,350,508	4,600,719	4,884,158	5,260,354	5,653,478	5,980,228	6,185,058	6,534,314
Aggregate output price index.....	3,220,166	3,355,156	3,645,737	4,055,856	4,352,910	4,602,674	4,885,954	5,261,742	5,653,309	5,977,299	6,181,291	6,528,096
	Percent increase in GDP (net effect of all adjustments)											
Input cost index.....	2.8	3.0	3.0	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.2	3.1
Aggregate output price index.....	2.9	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.0	3.1
	Percent increase in GDP less the R&D software double-count											
Input cost index.....	2.9	3.1	3.1	3.1	3.2	3.2	3.1	3.2	3.2	3.1	3.2	3.2
Aggregate output price index.....	3.0	3.1	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.1	3.2	3.1
	Millions of dollars											
	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
	Millions of dollars											
GDP (from the NIPAs).....	6,657,408	7,072,228	7,397,651	7,816,860	8,304,344	8,746,997	9,268,412	9,816,973	10,127,976	10,469,603	10,960,770	11,685,901
GDP less the R&D software double-count ¹	6,651,173	7,065,603	7,390,636	7,809,456	8,296,550	8,738,459	9,256,141	9,801,894	10,112,436	10,445,589	10,933,638	11,651,273
Adjusted GDP (with CFC adjusted by): ²												
Input cost index.....	6,857,410	7,278,328	7,618,604	8,053,460	8,558,150	9,012,730	9,549,383	10,119,616	10,432,270	10,760,482	11,261,745	11,997,274
Aggregate output price index.....	6,850,006	7,269,522	7,606,561	8,036,898	8,537,380	8,988,772	9,524,392	10,093,917	10,405,828	10,734,206	11,234,899	11,969,373
	Percent increase in GDP (net effect of all adjustments)											
Input cost index.....	3.0	2.9	3.0	3.0	3.1	3.0	3.0	3.1	3.0	2.8	2.7	2.7
Aggregate output price index.....	2.9	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.7	2.5	2.5	2.4
	Percent increase in GDP less the R&D software double-count											
Input cost index.....	3.1	3.0	3.1	3.1	3.2	3.1	3.2	3.2	3.2	3.0	3.0	3.0
Aggregate output price index.....	3.0	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.8	2.8	2.7

CFC Consumption of fixed capital
GDP Gross domestic product
NIPAs National income and product accounts
R&D Research and development

1. GDP is adjusted to remove the double-count of R&D software that is also included in R&D investment.

2. Adjusted GDP incorporates the impact of treating R&D as investment and the removal of the R&D software investment double-count. Differences based on price indexes are due to the effect of the price indexes on current-cost depreciation.

Notes. Percent increase is the adjustment to GDP calculated as a percent of unadjusted GDP from the NIPAs.

Table 1.3. Gross Domestic Income and Gross Domestic Income With R&D Treated as Investment, 1959–2004

	1959	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	
	Millions of dollars											
GDI (from the NIPAs)	506,124	527,327	545,266	585,269	618,511	662,767	717,529	781,511	827,959	905,435	981,437	
Adjusted GDI: ¹												
Input cost index	516,898	539,546	559,067	601,014	635,679	682,418	739,886	806,386	855,348	935,670	1,014,354	
Aggregate output price index	517,224	539,846	559,095	600,705	635,531	681,856	739,011	805,390	854,034	934,002	1,012,101	
	Percent increase in GDI											
Input cost index	2.1	2.3	2.5	2.7	2.8	3.0	3.1	3.2	3.3	3.3	3.4	
Aggregate output price index	2.2	2.4	2.5	2.6	2.8	2.9	3.0	3.1	3.1	3.2	3.1	
	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	
	Millions of dollars											
GDI (from the NIPAs)	1,031,241	1,115,515	1,229,172	1,374,059	1,489,124	1,620,627	1,800,138	2,008,651	2,268,128	2,517,280	2,748,069	
Adjusted GDI: ¹												
Input cost index	1,065,585	1,152,176	1,268,893	1,416,958	1,535,045	1,670,139	1,853,381	2,066,518	2,331,478	2,587,135	2,826,460	
Aggregate output price index	1,063,152	1,149,355	1,265,031	1,412,793	1,532,483	1,669,008	1,852,415	2,065,369	2,330,688	2,587,082	2,827,512	
	Percent increase in GDI											
Input cost index	3.3	3.3	3.2	3.1	3.1	3.1	3.0	2.9	2.8	2.8	2.9	
Aggregate output price index	3.1	3.0	2.9	2.8	2.9	3.0	2.9	2.8	2.8	2.8	2.9	
	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992
	Millions of dollars											
GDI (from the NIPAs)	3,097,508	3,254,706	3,490,932	3,918,582	4,203,578	4,415,834	4,717,795	5,123,316	5,444,689	5,736,843	5,923,410	6,234,996
Adjusted GDI: ¹												
Input cost index	3,186,553	3,352,160	3,597,666	4,038,563	4,333,824	4,553,728	4,862,481	5,279,878	5,613,817	5,914,004	6,112,542	6,431,565
Aggregate output price index	3,189,239	3,354,851	3,600,004	4,041,265	4,336,226	4,555,683	4,864,278	5,281,267	5,613,648	5,911,075	6,108,775	6,425,348
	Percent increase in GDI											
Input cost index	2.9	3.0	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.2	3.2
Aggregate output price index	3.0	3.1	3.1	3.1	3.2	3.2	3.1	3.1	3.1	3.0	3.1	3.1
	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
	Millions of dollars											
GDI (from the NIPAs)	6,517,867	6,929,731	7,296,466	7,723,173	8,233,690	8,761,644	9,304,137	9,944,136	10,217,619	10,490,593	10,912,018	11,666,756
Adjusted GDI: ¹												
Input cost index	6,717,869	7,135,831	7,517,419	7,959,773	8,487,496	9,027,377	9,585,108	10,246,779	10,521,913	10,781,472	11,212,993	11,978,129
Aggregate output price index	6,710,465	7,127,025	7,505,376	7,943,211	8,466,726	9,003,419	9,560,117	10,221,080	10,495,471	10,755,196	11,186,147	11,950,228
	Percent increase in GDI											
Input cost index	3.1	3.0	3.0	3.1	3.1	3.0	3.0	3.0	3.0	2.8	2.8	2.7
Aggregate output price index	3.0	2.8	2.9	2.8	2.8	2.8	2.8	2.8	2.7	2.5	2.5	2.4

GDI Gross domestic income
NIPAs National income and product accounts
R&D Research and development

1. Adjusted GDI incorporates the impact of treating R&D as investment and the removal of the R&D software investment double-count.

NOTE: Percent increase is the adjustment, calculated as a percent of unadjusted GDI from the NIPAs.

Table 1.4. National Saving and National Saving With R&D Treated as Investment as a Percent of Adjusted Gross National Income, 1959–2004

	1959	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	
	Percent of gross national income											
National saving	20.9	21.0	20.8	21.2	21.4	21.5	21.9	21.5	20.5	20.0	20.1	
	Percent of adjusted gross national income											
Adjusted national saving: ¹ Aggregate output price index	23.1	23.3	23.2	23.5	23.8	23.9	24.3	23.8	22.8	22.3	22.3	
	Percent of gross national income											
National saving	18.6	18.6	19.2	21.1	20.0	18.2	18.8	19.6	20.9	21.1	19.8	
	Percent of adjusted gross national income											
Adjusted national saving: ¹ Aggregate output price index	20.7	20.6	21.1	22.9	21.8	20.0	20.6	21.3	22.6	22.8	21.6	
	Percent of gross national income											
National saving	20.9	19.1	17.3	19.6	18.1	16.5	16.8	17.8	17.3	16.3	16.2	15.1
	Percent of adjusted gross national income											
Adjusted national saving: ¹ Aggregate output price index	22.8	21.2	19.4	21.7	20.4	18.9	19.2	20.0	19.5	18.5	18.5	17.4
	Percent of gross national income											
National saving	14.7	15.4	16.2	16.6	17.7	18.2	17.9	17.7	16.2	14.2	13.3	13.8
	Percent of adjusted gross national income											
Adjusted national saving: ¹ Aggregate output price index	16.8	17.4	18.2	18.7	19.8	20.3	20.0	19.8	18.3	16.2	15.4	15.8

R&D Research and development

1. Adjusted national saving incorporates the impact of treating R&D as investment and the removal of the

R&D software investment double-count.

NOTE. Slight differences in the saving rate are due to the effect of the alternate price indexes on current-cost depreciation.

Table 1.5. Aggregate Returns to R&D Assets, 1959–2004

(Millions of dollars)

	1959	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	
Nonprofit institutions serving households:												
Net returns	39	39	43	50	58	67	79	89	95	106	111	
Depreciation	93	99	107	118	130	144	160	179	202	226	249	
Government:												
Net returns	2,004	2,207	2,519	3,001	3,443	4,080	4,816	5,344	5,555	6,060	6,144	
Depreciation	4,780	5,535	6,289	7,019	7,799	8,741	9,708	10,722	11,840	12,894	13,828	
	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	
Nonprofit institutions serving households:												
Net returns	110	126	139	153	164	192	215	247	280	303	329	
Depreciation	278	310	336	363	430	512	560	618	691	789	923	
Government:												
Net returns	5,861	6,407	6,809	7,226	7,500	8,470	9,136	10,091	10,987	11,424	11,982	
Depreciation	14,846	15,790	16,448	17,195	19,725	22,605	23,785	25,211	27,075	29,736	33,626	
	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992
Nonprofit institutions serving households:												
Net returns	404	422	484	593	635	662	728	828	899	943	994	1,077
Depreciation	1,076	1,200	1,300	1,415	1,526	1,651	1,795	1,967	2,166	2,356	2,597	2,805
Government:												
Net returns	14,270	14,512	16,234	19,499	20,599	21,095	22,620	24,806	25,579	25,338	25,118	25,445
Depreciation	38,049	41,241	43,555	46,523	49,472	52,582	55,744	58,919	61,614	63,316	65,617	66,282
	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Nonprofit institutions serving households:												
Net returns	1,181	1,312	1,414	1,509	1,623	1,650	1,728	1,821	1,788	1,929	2,184	2,436
Depreciation	3,029	3,240	3,371	3,436	3,549	3,671	3,892	4,200	4,471	4,848	5,260	5,681
Government:												
Net returns	26,150	27,395	28,073	28,568	29,229	28,226	28,042	27,957	26,097	27,014	29,710	32,735
Depreciation	67,075	67,661	66,928	65,049	63,928	62,790	63,163	64,483	65,247	67,907	71,565	76,351

R&D Research and development

NOTE. Aggregate returns are shown as current-cost values. Current-cost depreciation is estimated using the aggregate output price index.

Table 2.1. Investment in R&D by Type of Funder, 1959–2004

[Millions of dollars]

	1959	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969
Total R&D investment	13,901	15,261	16,097	17,220	19,233	20,939	22,258	24,364	25,763	27,202	28,350
Private	4,319	4,781	5,040	5,447	5,808	6,281	6,982	7,840	8,706	9,629	10,695
Business	4,185	4,639	4,872	5,248	5,590	6,056	6,719	7,546	8,383	9,282	10,331
Chemical (NAICS 325)	781	845	919	980	1,047	1,148	1,249	1,329	1,356	1,526	1,635
Transportation (NAICS 336)	1,031	1,081	1,151	1,223	1,305	1,358	1,585	1,828	2,229	2,363	2,639
Computer and electronic (NAICS 334)	896	1,072	1,114	1,201	1,271	1,382	1,525	1,790	2,011	2,241	2,529
All other for-profit ¹	1,477	1,641	1,688	1,844	1,967	2,168	2,360	2,599	2,788	3,152	3,527
Universities and colleges	16	18	19	21	22	28	38	46	52	56	59
Other nonprofit institutions serving households	118	124	149	179	196	196	224	247	271	291	305
Government	9,582	10,480	11,058	11,772	13,424	14,658	15,277	16,524	17,057	17,573	17,655
Federal Government extramural	7,748	8,468	8,856	9,357	10,690	11,524	11,821	12,798	13,114	13,522	13,420
Federal Government intramural	1,677	1,838	2,009	2,201	2,497	2,870	3,166	3,394	3,570	3,630	3,755
State and local government ²	114	126	139	153	166	182	196	218	230	260	308
Universities and colleges	44	48	54	61	71	82	94	114	144	161	172

	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980
Total R&D investment	28,565	29,383	31,389	33,816	36,490	39,070	43,112	47,243	53,194	61,257	70,759
Private	11,222	11,642	12,587	14,273	16,080	17,223	19,279	21,334	24,817	29,358	34,912
Business	10,816	11,207	12,127	13,797	15,540	16,602	18,580	20,551	23,917	28,329	33,753
Chemical (NAICS 325)	1,675	1,734	1,830	2,014	2,369	2,653	2,932	3,089	3,515	4,068	4,722
Transportation (NAICS 336)	2,619	2,607	2,805	3,377	3,623	3,569	4,115	4,769	5,693	6,666	7,706
Computer and electronic (NAICS 334)	2,689	2,855	3,144	3,466	3,827	4,048	4,528	4,875	5,850	7,192	8,735
All other for-profit ¹	3,833	4,012	4,347	4,940	5,722	6,332	7,006	7,818	8,860	10,402	12,589
Universities and colleges	64	70	70	68	74	82	90	108	134	156	175
Other nonprofit institutions serving households	342	365	390	408	465	539	609	674	766	874	984
Government	17,343	17,741	18,802	19,543	20,411	21,847	23,833	25,909	28,377	31,899	35,847
Federal Government extramural	12,739	12,701	13,337	13,723	14,178	15,165	16,810	18,527	20,368	23,128	26,062
Federal Government intramural	4,070	4,440	4,805	5,077	5,401	5,764	6,018	6,254	6,704	7,302	8,120
State and local government ²	341	381	418	466	508	563	609	662	752	829	907
Universities and colleges	193	219	242	277	323	355	396	467	553	640	758

	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992
Total R&D investment	81,227	90,252	99,948	113,419	127,180	134,325	142,004	150,628	159,448	165,349	173,939	177,910
Private	40,826	46,205	51,467	59,172	65,543	69,642	72,032	78,681	86,694	90,932	100,474	104,838
Business	39,491	44,719	49,838	57,381	63,533	67,367	69,494	75,718	83,376	87,345	96,495	100,589
Chemical (NAICS 325)	5,519	6,910	7,592	8,635	9,256	9,739	10,635	12,074	13,118	14,410	15,777	16,603
Transportation (NAICS 336)	8,467	9,613	10,050	11,616	13,468	15,250	15,965	16,400	16,987	16,331	16,938	18,804
Computer and electronic (NAICS 334)	10,664	11,250	13,384	14,788	15,474	16,320	14,527	15,062	15,170	14,993	15,159	16,154
All other for-profit ¹	14,841	16,946	18,813	22,341	25,336	26,058	28,367	32,182	38,102	41,611	48,620	49,028
Universities and colleges	203	231	242	269	305	342	384	428	479	546	618	632
Other nonprofit institutions serving households	1,132	1,255	1,387	1,522	1,704	1,933	2,155	2,535	2,838	3,041	3,361	3,617
Government	40,401	44,047	48,481	54,247	61,637	64,683	69,972	71,947	72,754	74,417	73,465	73,072
Federal Government extramural	29,716	32,646	35,945	40,341	46,159	47,704	52,862	53,804	53,310	54,016	52,884	52,023
Federal Government intramural	8,798	9,325	10,270	11,421	12,647	13,742	13,536	14,220	15,132	15,690	15,574	15,906
State and local government ²	1,008	1,067	1,121	1,218	1,379	1,550	1,687	1,818	1,928	2,048	2,136	2,169
Universities and colleges	878	1,008	1,144	1,267	1,451	1,687	1,887	2,105	2,384	2,663	2,871	2,973

	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Total R&D investment	178,553	182,305	195,897	209,404	225,047	238,301	256,490	279,104	287,448	285,277	299,562	316,597
Private	105,865	108,906	120,888	133,896	147,891	159,757	177,558	200,189	202,812	194,526	200,506	209,040
Business	101,398	104,311	116,139	128,880	142,502	153,976	171,426	193,562	195,789	186,919	192,542	200,897
Chemical (NAICS 325)	18,180	18,403	19,559	20,162	21,615	24,243	26,924	31,148	32,430	34,273	41,555	48,911
Transportation (NAICS 336)	18,835	19,848	21,501	23,035	22,454	21,389	24,794	24,312	22,050	22,510	27,204	27,553
Computer and electronic (NAICS 334)	16,137	18,120	22,327	25,962	30,669	32,858	32,231	42,417	46,289	44,170	42,979	41,557
All other for-profit ¹	48,246	47,941	52,752	59,721	67,763	75,486	87,478	95,686	95,020	85,966	80,804	82,876
Universities and colleges	630	653	709	782	797	810	883	980	1,068	1,197	1,317	1,419
Other nonprofit institutions serving households	3,837	3,941	4,039	4,234	4,592	4,971	5,249	5,648	5,954	6,410	6,647	6,724
Government	72,687	73,400	75,009	75,509	77,156	78,544	78,932	78,915	84,637	90,752	99,056	107,557
Federal Government extramural	50,923	51,298	52,772	52,912	53,617	54,498	54,206	52,832	56,091	59,905	65,540	71,384
Federal Government intramural	16,468	16,561	16,438	16,366	16,749	16,812	16,879	17,452	19,167	20,754	22,954	25,231
State and local government ²	2,180	2,226	2,361	2,512	2,635	2,736	2,930	3,151	3,353	3,592	3,831	4,025
Universities and colleges	3,115	3,315	3,438	3,718	4,155	4,499	4,918	5,479	6,025	6,501	6,731	6,918

NAICS North American Industry Classification System

R&D Research and development

1. "All other for-profit" represents all for-profit business R&D excluding the three industries above.

2. Excludes universities and colleges.

Table 2.2. Real Investment in R&D by Type of Funder, 1959–2004

[Millions of chained (2000) dollars]

	1959	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969
Total R&D investment	34,667	38,322	40,652	43,759	49,284	53,616	56,772	61,590	63,846	66,057	67,597
Private	10,771	12,005	12,727	13,842	14,884	16,083	17,807	19,818	21,575	23,383	25,501
Business	10,436	11,649	12,303	13,336	14,324	15,508	17,138	19,076	20,775	22,540	24,633
Chemical (NAICS 325)	1,947	2,123	2,322	2,490	2,683	2,940	3,186	3,360	3,360	3,705	3,899
Transportation (NAICS 336)	2,570	2,715	2,907	3,108	3,343	3,478	4,042	4,621	5,523	5,739	6,293
Computer and electronic (NAICS 334)	2,235	2,691	2,812	3,052	3,258	3,540	3,890	4,526	4,984	5,441	6,031
All other for-profit ¹	3,684	4,120	4,262	4,686	5,040	5,550	6,020	6,569	6,909	7,655	8,410
Universities and colleges	40	44	48	52	57	72	98	117	128	136	141
Other nonprofit institutions serving households	295	312	375	454	503	503	571	625	671	707	727
Government	23,897	26,317	27,925	29,916	34,400	37,533	38,965	41,772	42,271	42,674	42,096
Federal Government extramural	19,322	21,264	22,366	23,778	27,392	29,508	30,152	32,353	32,499	32,836	31,999
Federal Government intramural	4,182	4,615	5,073	5,594	6,400	7,349	8,074	8,580	8,847	8,816	8,954
State and local government ²	283	317	351	388	425	466	499	551	569	631	734
Universities and colleges	109	121	136	156	182	211	239	288	356	391	409

	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980
Total R&D investment	65,760	65,119	68,243	71,937	68,614	64,111	67,060	69,498	73,315	77,630	80,196
Private	25,835	25,801	27,365	30,364	30,235	28,262	29,988	31,383	34,204	37,205	39,568
Business	24,901	24,837	26,365	29,350	29,222	27,243	28,902	30,232	32,964	35,901	38,255
Chemical (NAICS 325)	3,856	3,842	3,979	4,285	4,455	4,353	4,560	4,544	4,844	5,156	5,352
Transportation (NAICS 336)	6,029	5,777	6,098	7,183	6,812	5,857	6,402	7,016	7,846	8,447	8,734
Computer and electronic (NAICS 334)	6,191	6,327	6,836	7,373	7,196	6,642	7,043	7,172	8,062	9,115	9,900
All other for-profit ¹	8,825	8,891	9,451	10,509	10,759	10,390	10,897	11,500	12,211	13,183	14,268
Universities and colleges	147	155	152	146	139	134	140	159	184	197	198
Other nonprofit institutions serving households	787	808	848	868	875	885	947	992	1,056	1,107	1,115
Government	39,925	39,318	40,878	41,574	38,379	35,850	37,072	38,115	39,111	40,424	40,628
Federal Government extramural	29,326	28,149	28,996	29,193	26,660	24,885	26,148	27,254	28,073	29,310	29,538
Federal Government intramural	9,369	9,840	10,447	10,801	10,156	9,458	9,361	9,209	9,239	9,253	9,203
State and local government ²	784	844	909	992	956	924	947	974	1,037	1,051	1,028
Universities and colleges	445	485	525	588	607	583	616	687	763	811	859

	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992
Total R&D investment	82,205	85,162	90,624	98,488	107,390	110,914	115,049	120,000	125,487	130,343	135,500	139,695
Private	41,318	43,599	46,666	51,382	55,344	57,505	58,359	62,682	68,229	71,681	78,270	82,319
Business	39,967	42,197	45,189	49,827	53,648	55,626	56,303	60,321	65,618	68,853	75,170	78,982
Chemical (NAICS 325)	5,586	6,520	6,883	7,499	7,815	8,041	8,617	9,619	10,324	11,359	12,291	13,037
Transportation (NAICS 336)	8,569	9,071	9,112	10,087	11,372	12,592	12,934	13,066	13,369	12,873	13,195	14,765
Computer and electronic (NAICS 334)	10,792	10,615	12,135	12,842	13,066	13,476	11,770	11,999	11,939	11,819	11,809	12,684
All other for-profit ¹	15,019	15,991	17,058	19,400	21,394	21,516	22,982	25,638	29,986	32,802	37,875	38,497
Universities and colleges	205	218	220	234	257	282	311	341	377	431	481	496
Other nonprofit institutions serving households	1,146	1,185	1,257	1,321	1,439	1,596	1,746	2,020	2,234	2,397	2,619	2,840
Government	40,887	41,563	43,958	47,106	52,046	53,410	56,690	57,317	57,258	58,662	57,230	57,376
Federal Government extramural	30,074	30,805	32,592	35,030	38,976	39,390	42,828	42,864	41,955	42,580	41,197	40,849
Federal Government intramural	8,904	8,800	9,312	9,917	10,679	11,347	10,966	11,328	11,909	12,368	12,133	12,490
State and local government ²	1,020	1,007	1,017	1,058	1,165	1,280	1,367	1,448	1,517	1,615	1,664	1,703
Universities and colleges	889	951	1,037	1,101	1,226	1,393	1,529	1,677	1,876	2,099	2,236	2,334

	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Total R&D investment	140,647	144,318	159,414	179,384	202,112	226,150	252,000	279,104	296,378	297,545	314,354	332,107
Private	83,391	86,213	98,374	114,700	132,819	151,611	174,450	200,189	209,112	202,891	210,407	219,281
Business	79,872	82,576	94,510	110,404	127,979	146,125	168,425	193,562	201,871	194,957	202,050	210,739
Chemical (NAICS 325)	14,321	14,568	15,917	17,272	19,412	23,007	26,452	31,148	33,437	35,746	43,607	51,307
Transportation (NAICS 336)	14,837	15,712	17,497	19,733	20,166	20,298	24,360	24,312	22,735	23,478	28,547	28,903
Computer and electronic (NAICS 334)	12,711	14,344	18,169	22,240	27,543	31,183	31,667	42,417	47,727	46,070	45,102	43,592
All other for-profit ¹	38,004	37,951	42,928	51,160	60,857	71,637	85,947	95,686	97,972	89,663	84,794	86,936
Universities and colleges	496	517	577	670	716	769	867	980	1,101	1,249	1,382	1,488
Other nonprofit institutions serving households	3,023	3,120	3,287	3,627	4,124	4,717	5,157	5,648	6,139	6,685	6,975	7,054
Government	57,256	58,105	61,040	64,684	69,293	74,539	77,550	78,915	87,266	94,654	103,947	112,826
Federal Government extramural	40,112	40,609	42,944	45,327	48,153	51,719	53,257	52,832	57,834	62,482	68,776	74,881
Federal Government intramural	12,972	13,110	13,377	14,020	15,042	15,955	16,583	17,452	19,763	21,647	24,088	26,467
State and local government ²	1,717	1,762	1,921	2,152	2,367	2,597	2,878	3,151	3,457	3,746	4,020	4,222
Universities and colleges	2,454	2,624	2,798	3,185	3,732	4,269	4,832	5,479	6,212	6,780	7,063	7,257

NAICS North American Industry Classification System

R&D Research and development

1. "All other for-profit" represents all for-profit business R&D excluding the three industries above.

2. Excludes universities and colleges.

Table 2.3. Current-Cost Net Stock of R&D by Type of Funder, 1959–2003

[Millions of dollars]

	1959	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969
Total R&D net stock	51,413	57,474	63,379	69,318	76,471	84,538	92,981	102,922	113,297	123,518	134,462
Private	19,646	20,975	22,343	23,846	25,544	27,564	30,047	33,212	36,901	40,912	45,717
Business.....	19,055	20,346	21,656	23,084	24,696	26,633	29,007	32,041	35,584	39,446	44,095
Chemical (NAICS 325).....	3,848	4,200	4,582	4,970	5,397	5,901	6,471	7,112	7,753	8,489	9,334
Transportation (NAICS 336).....	4,076	4,303	4,551	4,813	5,120	5,446	5,943	6,625	7,591	8,516	9,618
Computer and electronic (NAICS 334).....	3,535	3,914	4,267	4,635	5,022	5,474	6,006	6,747	7,612	8,555	9,699
All other for-profit ¹	7,596	7,930	8,256	8,665	9,158	9,811	10,586	11,557	12,628	13,886	15,444
Universities and colleges.....	112	111	111	113	116	125	142	166	193	219	247
Other nonprofit institutions serving households.....	479	519	576	650	732	806	897	1,005	1,125	1,246	1,375
Government	31,767	36,499	41,036	45,472	50,927	56,974	62,934	69,710	76,396	82,606	88,745
Federal Government extramural.....	23,629	27,770	31,630	35,309	39,791	44,582	49,122	54,318	59,363	64,064	68,569
Federal Government intramural.....	7,415	7,959	8,577	9,265	10,157	11,313	12,619	14,054	15,524	16,842	18,240
State and local government ²	483	524	571	623	681	749	823	913	1,006	1,115	1,263
Universities and colleges.....	240	247	258	274	298	330	370	425	503	586	673

	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980
Total R&D net stock	145,398	154,499	163,286	182,717	212,955	235,580	252,340	272,880	301,134	342,196	394,530
Private	50,800	55,199	59,551	68,464	82,077	92,744	101,430	111,815	126,181	146,846	173,566
Business.....	48,987	53,208	57,393	66,018	79,174	89,446	97,804	107,793	121,627	141,566	167,408
Chemical (NAICS 325).....	10,230	11,022	11,761	13,304	15,890	18,094	19,858	21,796	24,375	28,010	32,628
Transportation (NAICS 336).....	10,610	11,346	12,077	13,943	16,560	18,238	19,648	21,604	24,501	28,595	33,672
Computer and electronic (NAICS 334).....	10,916	12,023	13,164	15,230	18,253	20,540	22,388	24,486	27,639	32,456	38,822
All other for-profit ¹	17,231	18,817	20,391	23,541	28,471	32,573	35,909	39,905	45,112	52,505	62,286
Universities and colleges.....	278	308	333	372	434	482	518	572	653	765	899
Other nonprofit institutions serving households.....	1,535	1,683	1,825	2,073	2,469	2,816	3,107	3,451	3,901	4,515	5,260
Government	94,597	99,300	103,736	114,253	130,878	142,836	150,910	161,065	174,953	195,351	220,964
Federal Government extramural.....	72,467	75,239	77,750	84,721	96,099	104,047	109,404	116,521	126,413	141,229	159,890
Federal Government intramural.....	19,919	21,567	23,205	26,254	30,780	34,187	36,418	38,870	42,082	46,625	52,311
State and local government ²	1,435	1,611	1,788	2,097	2,535	2,900	3,182	3,507	3,939	4,507	5,176
Universities and colleges.....	776	883	992	1,181	1,464	1,703	1,906	2,167	2,520	2,990	3,588

	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991
Total R&D net stock	444,611	483,830	522,740	566,271	612,019	655,921	699,429	742,756	781,487	821,096	859,282
Private	200,246	222,905	245,700	271,396	297,335	322,450	345,586	370,640	396,276	422,738	452,328
Business.....	193,236	215,209	237,341	262,354	287,574	311,855	334,050	357,933	382,352	407,504	435,687
Chemical (NAICS 325).....	37,198	41,625	45,952	50,650	55,071	59,328	63,891	69,173	74,276	80,143	86,318
Transportation (NAICS 336).....	38,215	42,019	45,266	49,178	53,747	59,003	63,908	68,185	71,652	74,006	76,157
Computer and electronic (NAICS 334).....	45,631	50,769	56,743	62,852	68,175	73,232	75,695	78,032	79,407	80,484	81,190
All other for-profit ¹	72,191	80,796	89,380	99,674	110,581	120,291	130,555	142,543	157,016	172,870	192,022
Universities and colleges.....	1,031	1,143	1,242	1,346	1,459	1,585	1,730	1,890	2,058	2,266	2,500
Other nonprofit institutions serving households.....	5,980	6,553	7,117	7,696	8,302	9,010	9,807	10,817	11,866	12,968	14,141
Government	244,365	260,925	277,040	294,875	314,683	333,471	353,843	372,116	385,211	398,357	406,953
Federal Government extramural.....	177,285	189,950	202,298	216,005	231,458	245,397	261,667	275,738	284,886	293,660	298,824
Federal Government intramural.....	57,116	60,072	62,939	66,144	69,484	73,128	75,908	78,698	81,232	84,002	85,891
State and local government ²	5,783	6,199	6,553	6,913	7,316	7,796	8,320	8,867	9,359	9,902	10,401
Universities and colleges.....	4,181	4,704	5,250	5,813	6,424	7,150	7,947	8,813	9,734	10,794	11,838

	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
Total R&D net stock	890,525	918,655	934,842	940,967	950,780	970,693	1,005,582	1,068,088	1,141,045	1,214,592	1,287,317	1,369,511
Private	479,048	503,252	520,446	534,634	553,794	580,610	617,231	674,178	742,281	804,896	858,441	914,367
Business.....	461,058	483,900	500,069	513,698	532,323	558,417	593,943	649,275	715,578	776,216	827,262	880,572
Chemical (NAICS 325).....	92,062	98,740	103,622	106,697	109,001	112,057	117,848	127,384	139,669	152,175	166,536	187,070
Transportation (NAICS 336).....	79,187	81,767	83,789	85,140	86,931	87,618	87,808	92,500	95,838	96,893	99,177	105,852
Computer and electronic (NAICS 334).....	82,215	83,139	84,706	87,981	93,197	101,327	110,507	119,193	135,492	152,996	167,033	178,514
All other for-profit ¹	207,593	220,254	227,952	233,880	243,193	257,416	277,780	310,198	344,579	374,152	394,515	409,136
Universities and colleges.....	2,696	2,864	2,991	3,084	3,202	3,303	3,421	3,642	3,914	4,240	4,676	5,182
Other nonprofit institutions serving households.....	15,294	16,488	17,386	17,853	18,270	18,889	19,867	21,262	22,788	24,441	26,503	28,613
Government	411,477	415,403	414,396	406,333	396,986	390,083	388,351	393,910	398,764	409,696	428,876	455,145
Federal Government extramural.....	300,637	301,490	298,958	291,931	284,007	277,646	275,134	277,499	278,402	283,276	293,916	309,749
Federal Government intramural.....	87,292	89,093	89,624	88,074	86,048	84,574	84,001	85,025	86,454	89,576	94,611	101,426
State and local government ²	10,795	11,151	11,357	11,411	11,502	11,662	11,963	12,591	13,319	14,168	15,249	16,469
Universities and colleges.....	12,752	13,670	14,458	14,917	15,429	16,202	17,254	18,795	20,588	22,675	25,100	27,501

NAICS North American Industry Classification System
R&D Research and development

1. "All other for-profit" represents all for-profit business net stock of R&D excluding the three industries above.
2. Excludes universities and colleges.

Table 2.4. Real Net Stock of R&D by Type of Funder, 1959–2004
 [Millions of chained (2000) dollars]

	1959	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969
Total R&D net stock	128,655	144,733	160,558	176,888	195,883	216,042	236,100	257,595	277,922	297,205	314,984
Private	49,162	52,820	56,602	60,852	65,433	70,441	76,296	83,123	90,520	98,440	107,095
Business	47,684	51,235	54,862	58,905	63,260	68,062	73,656	80,192	87,289	94,914	103,295
Chemical (NAICS 325)	9,629	10,576	11,607	12,683	13,824	15,081	16,433	17,800	19,017	20,427	21,864
Transportation (NAICS 336)	10,200	10,835	11,530	12,283	13,114	13,919	15,092	16,580	18,621	20,492	22,530
Computer and electronic (NAICS 334)	8,846	9,856	10,810	11,827	12,864	13,989	15,250	16,887	18,673	20,584	22,721
All other for-profit ¹	19,009	19,968	20,915	22,112	23,458	25,073	26,881	28,925	30,977	33,411	36,179
Universities and colleges	279	278	281	287	297	319	362	416	472	527	579
Other nonprofit institutions serving households	1,198	1,307	1,458	1,659	1,876	2,060	2,279	2,515	2,759	2,999	3,222
Government	79,494	91,912	103,956	116,036	130,450	145,601	159,803	174,472	187,402	198,765	207,889
Federal Government extramural	59,130	69,930	80,128	90,104	101,926	113,932	124,733	135,949	145,618	154,149	160,626
Federal Government intramural	18,556	20,041	21,727	23,643	26,016	28,912	32,043	35,174	38,081	40,524	42,727
State and local government ²	1,208	1,321	1,447	1,589	1,744	1,914	2,089	2,285	2,468	2,682	2,958
Universities and colleges	599	621	653	700	763	844	938	1,064	1,234	1,410	1,577

	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980
Total R&D net stock	328,363	339,121	351,139	364,741	373,203	376,238	381,565	388,350	397,629	409,469	421,864
Private	114,726	121,161	128,061	136,669	143,840	148,119	153,373	159,130	166,614	175,714	185,591
Business	110,632	116,790	123,420	131,786	138,753	142,852	147,891	153,405	160,601	169,396	179,006
Chemical (NAICS 325)	23,103	24,192	25,291	26,558	27,847	28,898	30,028	31,019	32,185	33,517	34,888
Transportation (NAICS 336)	23,961	24,905	25,971	27,833	29,022	29,128	29,710	30,747	32,352	34,216	36,005
Computer and electronic (NAICS 334)	24,653	26,390	28,308	30,402	31,988	32,804	33,854	34,848	36,495	38,837	41,512
All other for-profit ¹	38,915	41,302	43,849	46,993	49,895	52,022	54,299	56,792	59,568	62,827	66,601
Universities and colleges	628	677	716	743	760	770	784	814	862	915	961
Other nonprofit institutions serving households	3,467	3,694	3,925	4,139	4,327	4,497	4,698	4,911	5,151	5,403	5,624
Government	213,636	217,960	223,078	228,072	229,362	228,119	228,193	229,220	231,015	233,755	236,273
Federal Government extramural	163,659	165,148	167,197	169,121	168,413	166,170	165,431	165,827	166,920	168,994	170,997
Federal Government intramural	44,985	47,339	49,902	52,408	53,941	54,599	55,068	55,318	55,566	55,791	55,935
State and local government ²	3,240	3,535	3,846	4,186	4,443	4,631	4,812	4,991	5,201	5,393	5,535
Universities and colleges	1,753	1,939	2,134	2,358	2,565	2,720	2,882	3,084	3,327	3,578	3,836

	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992
Total R&D net stock	434,219	447,440	463,731	484,846	511,007	536,462	561,898	588,120	615,538	643,429	672,038	700,355
Private	195,566	206,140	217,965	232,371	248,261	263,724	277,633	293,476	312,127	331,267	353,762	376,748
Business	188,719	199,023	210,549	224,629	240,111	255,058	268,364	283,414	301,160	319,329	340,748	362,599
Chemical (NAICS 325)	36,329	38,494	40,765	43,367	45,982	48,523	51,328	54,772	58,503	62,802	67,509	72,402
Transportation (NAICS 336)	37,322	38,858	40,156	42,107	44,876	48,257	51,341	53,990	56,437	57,993	59,562	62,277
Computer and electronic (NAICS 334)	44,564	46,951	50,338	53,814	56,923	59,895	60,811	61,786	62,545	63,069	63,498	64,658
All other for-profit ¹	70,504	74,720	79,290	83,341	87,330	91,383	94,884	98,867	102,674	106,374	110,179	114,262
Universities and colleges	1,007	1,057	1,102	1,153	1,218	1,297	1,390	1,497	1,621	1,776	1,955	2,121
Other nonprofit institutions serving households	5,840	6,060	6,314	6,589	6,932	7,369	7,878	8,565	9,346	10,162	11,060	12,028
Government	238,653	241,300	245,766	252,474	262,746	272,738	284,266	294,644	303,411	312,162	318,275	323,607
Federal Government extramural	173,141	175,664	179,462	184,945	193,257	200,704	210,214	218,331	224,390	230,118	233,708	236,437
Federal Government intramural	55,781	55,554	55,834	56,633	58,016	59,810	60,982	62,314	63,983	65,826	67,174	68,651
State and local government ²	5,648	5,732	5,813	5,919	6,109	6,376	6,684	7,021	7,372	7,760	8,135	8,490
Universities and colleges	4,083	4,350	4,657	4,977	5,364	5,848	6,384	6,978	7,667	8,458	9,258	10,029

	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Total R&D net stock	725,426	750,252	785,381	833,716	895,802	970,850	1,058,657	1,158,497	1,259,532	1,346,766	1,436,870	1,530,513
Private	397,399	417,681	446,234	485,608	535,815	595,912	668,225	753,634	834,677	898,085	959,339	1,020,248
Business	382,118	401,328	428,759	466,781	515,334	573,429	643,542	726,523	804,935	865,465	923,883	982,209
Chemical (NAICS 325)	77,971	83,161	89,055	95,581	103,412	113,778	126,259	141,806	157,805	174,227	196,271	223,166
Transportation (NAICS 336)	64,568	67,244	71,062	76,228	80,858	84,778	91,683	97,304	100,478	103,757	111,059	117,370
Computer and electronic (NAICS 334)	65,652	67,980	73,433	81,722	93,509	106,690	118,141	137,565	158,656	174,747	187,294	196,387
All other for-profit ¹	173,926	182,942	195,209	213,250	237,555	268,186	307,459	349,849	387,995	412,734	429,259	445,286
Universities and colleges	2,261	2,400	2,574	2,807	3,048	3,303	3,610	3,974	4,397	4,892	5,437	5,998
Other nonprofit institutions serving households	13,020	13,953	14,901	16,020	17,432	19,181	21,074	23,137	25,345	27,727	30,020	32,041
Government	328,028	332,571	339,147	348,107	359,987	374,938	390,432	404,863	424,855	448,682	477,531	510,265
Federal Government extramural	238,075	239,927	243,661	249,039	256,225	265,631	275,049	282,660	293,757	307,489	324,984	345,501
Federal Government intramural	70,353	71,927	73,512	75,453	78,049	81,100	84,274	87,777	92,891	98,980	106,414	114,934
State and local government ²	8,805	9,114	9,524	10,086	10,762	11,550	12,480	13,523	14,692	15,953	17,279	18,592
Universities and colleges	10,794	11,603	12,450	13,529	14,952	16,658	18,629	20,903	23,514	26,259	28,853	31,238

NAICS North American Industry Classification System
 R&D Research and development
 1. "All other for-profit" represents all for-profit business net stock of R&D excluding the three industries above.
 2. Excludes universities and colleges.

Table 2.5. Current-Cost Depreciation of R&D by Type of Funder, 1959–2004

(Millions of dollars)

	1959	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969
Total R&D depreciation	7,913	8,859	9,831	10,794	11,820	13,066	14,394	15,860	17,561	19,261	20,894
Private	3,134	3,324	3,542	3,775	4,021	4,325	4,686	5,139	5,721	6,367	7,066
Business.....	3,041	3,225	3,436	3,657	3,891	4,181	4,526	4,960	5,520	6,142	6,816
Chemical (NAICS 325).....	429	468	511	556	602	657	719	788	865	945	1,032
Transportation (NAICS 336).....	785	829	876	927	980	1,044	1,125	1,239	1,405	1,593	1,784
Computer and electronic (NAICS 334).....	612	670	736	801	866	943	1,031	1,143	1,290	1,454	1,633
All other for-profit ¹	1,215	1,259	1,313	1,373	1,442	1,537	1,652	1,790	1,960	2,150	2,366
Universities and colleges.....	18	18	18	18	18	19	22	25	29	33	36
Other nonprofit institutions serving households.....	74	81	89	99	112	125	138	154	173	192	212
Government	4,780	5,535	6,289	7,019	7,799	8,741	9,708	10,722	11,840	12,894	13,828
Federal Government extramural.....	3,501	4,167	4,818	5,431	6,076	6,835	7,587	8,361	9,212	10,009	10,704
Federal Government intramural.....	1,165	1,246	1,341	1,448	1,571	1,739	1,938	2,156	2,397	2,625	2,831
State and local government ²	75	82	89	97	105	116	127	140	156	172	192
Universities and colleges.....	39	39	41	43	46	51	57	64	75	88	102

	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980
Total R&D depreciation	22,753	24,528	25,861	27,422	31,990	37,221	39,687	42,631	46,462	51,914	59,823
Private	7,907	8,738	9,413	10,227	12,266	14,616	15,901	17,420	19,387	22,178	26,197
Business.....	7,629	8,428	9,077	9,864	11,836	14,104	15,341	16,802	18,697	21,389	25,274
Chemical (NAICS 325).....	1,137	1,242	1,325	1,419	1,684	2,013	2,205	2,415	2,669	3,017	3,513
Transportation (NAICS 336).....	1,997	2,181	2,314	2,501	2,990	3,505	3,741	4,065	4,528	5,195	6,128
Computer and electronic (NAICS 334).....	1,850	2,071	2,262	2,482	2,984	3,550	3,853	4,199	4,654	5,345	6,375
All other for-profit ¹	2,645	2,935	3,176	3,462	4,178	5,036	5,542	6,123	6,845	7,831	9,259
Universities and colleges.....	42	48	52	56	65	76	81	88	99	114	134
Other nonprofit institutions serving households.....	236	262	284	307	365	436	479	530	592	675	789
Government	14,846	15,790	16,448	17,195	19,725	22,605	23,785	25,211	27,075	29,736	33,626
Federal Government extramural.....	11,421	12,029	12,394	12,819	14,555	16,532	17,285	18,258	19,575	21,492	24,321
Federal Government intramural.....	3,089	3,378	3,626	3,899	4,586	5,363	5,716	6,084	6,523	7,125	7,993
State and local government ²	218	248	275	306	372	448	492	540	600	678	782
Universities and colleges.....	117	135	152	171	212	261	292	329	377	442	530

	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992
Total R&D depreciation	69,019	76,240	81,981	89,103	96,197	103,498	110,609	117,713	124,609	129,967	137,214	141,846
Private	30,969	34,999	38,426	42,581	46,725	50,916	54,865	58,794	62,995	66,652	71,597	75,564
Business.....	29,893	33,799	37,126	41,166	45,199	49,265	53,070	56,827	60,829	64,296	69,000	72,759
Chemical (NAICS 325).....	4,096	4,615	5,088	5,639	6,158	6,661	7,173	7,751	8,377	8,956	9,736	10,371
Transportation (NAICS 336).....	7,166	7,985	8,619	9,369	10,188	11,155	12,158	13,076	13,877	14,357	14,925	15,346
Computer and electronic (NAICS 334).....	7,648	8,721	9,648	10,785	11,792	12,721	13,397	13,837	14,205	14,329	14,609	14,676
All other for-profit ¹	10,984	12,479	13,772	15,372	17,060	18,727	20,342	22,162	24,369	26,654	29,730	32,366
Universities and colleges.....	158	177	193	211	228	247	269	294	321	349	388	421
Other nonprofit institutions serving households.....	918	1,023	1,107	1,205	1,298	1,404	1,526	1,674	1,845	2,007	2,209	2,384
Government	38,049	41,241	43,555	46,523	49,472	52,582	55,744	58,919	61,614	63,316	65,617	66,282
Federal Government extramural.....	27,569	29,972	31,757	34,026	36,316	38,685	41,124	43,616	45,611	46,749	48,276	48,548
Federal Government intramural.....	8,950	9,567	9,961	10,501	11,009	11,570	12,089	12,549	13,012	13,352	13,843	14,026
State and local government ²	896	978	1,032	1,095	1,155	1,226	1,307	1,395	1,483	1,556	1,654	1,717
Universities and colleges.....	634	725	806	900	993	1,101	1,224	1,360	1,509	1,659	1,844	1,992

	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Total R&D depreciation	146,724	150,946	152,728	152,981	155,915	159,220	167,120	179,263	189,458	201,639	213,698	227,327
Private	79,649	83,285	85,800	87,932	91,987	96,430	103,957	114,780	124,210	133,732	142,134	150,975
Business.....	76,620	80,045	82,429	84,496	88,439	92,759	100,064	110,580	119,740	128,885	136,874	145,295
Chemical (NAICS 325).....	11,111	11,847	12,317	12,544	12,896	13,320	14,219	15,602	16,912	18,528	20,549	23,272
Transportation (NAICS 336).....	15,926	16,468	16,809	17,005	17,299	17,261	17,763	18,691	18,972	19,366	20,246	21,537
Computer and electronic (NAICS 334).....	14,875	15,179	15,626	16,286	17,544	18,969	20,577	22,993	25,833	28,743	31,022	32,889
All other for-profit ¹	34,708	36,552	37,678	38,661	40,699	43,209	47,506	53,295	58,023	62,247	65,057	67,597
Universities and colleges.....	451	477	496	509	529	543	570	615	658	722	798	884
Other nonprofit institutions serving households.....	2,578	2,763	2,875	2,927	3,020	3,128	3,322	3,585	3,813	4,126	4,462	4,797
Government	67,075	67,661	66,928	65,049	63,928	62,790	63,163	64,483	65,247	67,907	71,565	76,351
Federal Government extramural.....	48,843	48,959	48,183	46,634	45,616	44,586	44,620	45,220	45,328	46,740	48,869	51,825
Federal Government intramural.....	14,308	14,573	14,491	14,100	13,858	13,597	13,648	13,950	14,207	14,916	15,870	17,109
State and local government ²	1,780	1,835	1,857	1,856	1,882	1,906	1,983	2,108	2,219	2,382	2,568	2,773
Universities and colleges.....	2,143	2,294	2,397	2,459	2,571	2,701	2,912	3,205	3,493	3,869	4,258	4,645

NAICS North American Industry Classification System

R&D Research and development

1. "All other for-profit" represents all for-profit business depreciation of R&D excluding the three industries above.

2. Excludes universities and colleges.

Table 2.6. Real Depreciation of R&D by Type of Funder, 1959–2004

[Millions of chained (2000) dollars]

	1959	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969
Total R&D depreciation	19,734	22,244	24,827	27,429	30,289	33,457	36,714	40,094	43,519	46,773	49,819
Private	7,815	8,347	8,946	9,592	10,304	11,074	11,952	12,991	14,178	15,463	16,847
Business.....	7,583	8,098	8,676	9,293	9,970	10,705	11,545	12,539	13,679	14,915	16,253
Chemical (NAICS 325).....	1,070	1,176	1,291	1,414	1,543	1,682	1,834	1,992	2,143	2,296	2,461
Transportation (NAICS 336).....	1,957	2,080	2,212	2,355	2,512	2,674	2,869	3,132	3,481	3,868	4,255
Computer and electronic (NAICS 334).....	1,527	1,682	1,858	2,035	2,220	2,415	2,629	2,890	3,197	3,530	3,894
All other for-profit ¹	3,029	3,160	3,315	3,489	3,695	3,935	4,212	4,525	4,857	5,221	5,642
Universities and colleges.....	46	45	45	46	47	50	55	63	72	81	90
Other nonprofit institutions serving households.....	185	203	224	253	287	319	352	389	428	467	504
Government	11,920	13,898	15,881	17,837	19,985	22,383	24,763	27,103	29,341	31,311	32,972
Federal Government extramural.....	8,730	10,464	12,167	13,803	15,570	17,502	19,351	21,136	22,830	24,305	25,522
Federal Government intramural.....	2,906	3,130	3,387	3,679	4,026	4,454	4,942	5,450	5,940	6,373	6,750
State and local government ²	188	205	224	246	270	297	325	355	385	418	457
Universities and colleges.....	96	99	103	110	119	130	144	162	186	214	242

	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980
Total R&D depreciation	52,381	54,360	56,225	58,336	60,153	61,076	61,733	62,713	64,037	65,789	67,802
Private	18,204	19,366	20,465	21,756	23,064	23,983	24,735	25,626	26,720	28,105	29,691
Business.....	17,564	18,679	19,734	20,984	22,255	23,143	23,863	24,717	25,769	27,105	28,645
Chemical (NAICS 325).....	2,617	2,753	2,880	3,018	3,166	3,303	3,430	3,553	3,679	3,824	3,981
Transportation (NAICS 336).....	4,598	4,833	5,032	5,321	5,623	5,751	5,819	5,979	6,241	6,584	6,945
Computer and electronic (NAICS 334).....	4,260	4,590	4,918	5,279	5,610	5,826	5,994	6,178	6,415	6,774	7,225
All other for-profit ¹	6,089	6,504	6,904	7,366	7,856	8,264	8,621	9,007	9,435	9,924	10,494
Universities and colleges.....	98	106	113	118	122	124	126	130	136	144	152
Other nonprofit institutions serving households.....	542	581	618	654	686	715	746	779	816	856	894
Government	34,178	34,994	35,760	36,580	37,089	37,093	36,998	37,087	37,316	37,684	38,110
Federal Government extramural.....	26,293	26,660	26,947	27,269	27,368	27,128	26,887	26,859	26,979	27,236	27,564
Federal Government intramural.....	7,112	7,486	7,884	8,295	8,623	8,801	8,892	8,950	8,991	9,029	9,059
State and local government ²	503	549	598	651	700	736	766	795	826	859	886
Universities and colleges.....	270	299	330	364	399	429	454	484	520	560	601

	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992
Total R&D depreciation	69,850	71,940	74,333	77,373	81,229	85,460	89,613	93,778	98,069	102,452	106,891	111,378
Private	31,343	33,025	34,841	36,975	39,455	42,042	44,451	46,839	49,578	52,541	55,775	59,333
Business.....	30,253	31,893	33,663	35,746	38,166	40,679	42,997	45,272	47,873	50,684	53,752	57,131
Chemical (NAICS 325).....	4,145	4,355	4,613	4,897	5,200	5,500	5,811	6,175	6,593	7,060	7,584	8,143
Transportation (NAICS 336).....	7,252	7,534	7,815	8,136	8,603	9,211	9,850	10,417	10,921	11,317	11,626	12,050
Computer and electronic (NAICS 334).....	7,740	8,229	8,748	9,365	9,957	10,504	10,854	11,024	11,180	11,295	11,381	11,524
All other for-profit ¹	11,117	11,775	12,487	13,349	14,406	15,463	16,481	17,655	19,179	21,011	23,160	25,414
Universities and colleges.....	160	167	175	183	192	204	218	234	253	275	303	330
Other nonprofit institutions serving households.....	930	965	1,003	1,046	1,096	1,160	1,236	1,333	1,452	1,582	1,721	1,872
Government	38,508	38,915	39,492	40,398	41,775	43,418	45,162	46,939	48,491	49,911	51,117	52,044
Federal Government extramural.....	27,901	28,281	28,794	29,547	30,665	31,943	33,318	34,747	35,896	36,852	37,608	38,120
Federal Government intramural.....	9,058	9,027	9,031	9,119	9,296	9,553	9,794	9,997	10,240	10,525	10,784	11,013
State and local government ²	907	923	936	951	975	1,012	1,059	1,111	1,167	1,227	1,289	1,348
Universities and colleges.....	642	684	730	781	838	909	992	1,083	1,187	1,307	1,436	1,564

	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Total R&D depreciation	115,575	119,493	124,285	131,049	140,026	151,102	164,194	179,263	195,344	210,310	224,251	238,463
Private	62,740	65,931	69,821	75,326	82,613	91,513	102,137	114,780	128,069	139,483	149,152	158,372
Business.....	60,354	63,366	67,078	72,383	79,426	88,030	98,313	110,580	123,459	134,427	143,633	152,412
Chemical (NAICS 325).....	8,752	9,378	10,023	10,746	11,582	12,641	13,970	15,602	17,438	19,325	21,563	24,412
Transportation (NAICS 336).....	12,545	13,036	13,679	14,567	15,536	16,381	17,452	18,691	19,561	20,199	21,246	22,592
Computer and electronic (NAICS 334).....	11,717	12,016	12,716	13,951	15,756	18,002	20,216	22,993	26,636	29,979	32,554	34,500
All other for-profit ¹	27,340	28,935	30,661	33,118	36,552	41,006	46,674	53,295	59,825	64,924	68,270	70,909
Universities and colleges.....	355	378	403	436	475	515	560	615	679	753	837	927
Other nonprofit institutions serving households.....	2,031	2,187	2,339	2,507	2,712	2,969	3,264	3,585	3,931	4,303	4,682	5,032
Government	52,835	53,562	54,464	55,723	57,413	59,589	62,057	64,483	67,274	70,827	75,098	80,092
Federal Government extramural.....	38,474	38,757	39,210	39,949	40,967	42,313	43,839	45,220	46,737	48,750	51,282	54,364
Federal Government intramural.....	11,271	11,536	11,792	12,078	12,446	12,904	13,409	13,950	14,649	15,557	16,654	17,947
State and local government ²	1,402	1,453	1,511	1,590	1,690	1,809	1,948	2,108	2,288	2,485	2,695	2,908
Universities and colleges.....	1,688	1,816	1,950	2,106	2,309	2,563	2,861	3,205	3,601	4,036	4,469	4,872

NAICS North American Industry Classification System

R&D Research and development

1. "All other for-profit" represents all for-profit business depreciation of R&D excluding the three industries above.

2. Excludes universities and colleges.

Table 3.1. Domestic R&D Output by Performer, 1959–2004

(Millions of dollars)

	1959	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	
Total R&D performance	13,967	15,325	16,162	17,286	19,310	21,027	22,369	24,503	25,943	27,414	28,600	
Private	11,807	12,928	13,504	14,313	15,905	17,104	18,006	19,760	20,865	22,145	23,106	
Business.....	10,695	11,631	11,957	12,700	14,103	15,065	15,870	17,490	18,310	19,486	20,376	
Universities and colleges.....	286	346	406	467	529	605	692	784	873	931	954	
Other nonprofit institutions serving households.....	179	208	257	311	376	431	496	520	607	612	593	
Federally funded R&D centers:												
Business.....	411	469	545	425	414	460	376	359	420	417	465	
Universities and colleges.....	192	209	237	272	326	369	375	387	413	436	445	
Other nonprofit institutions serving households.....	44	66	102	137	157	174	197	220	242	263	273	
Public	2,161	2,396	2,658	2,972	3,405	3,923	4,362	4,744	5,078	5,269	5,494	
Federal Government.....	1,677	1,838	2,009	2,201	2,497	2,870	3,166	3,394	3,570	3,630	3,755	
State and local government ¹	53	58	63	68	69	74	91	108	123	140	155	
Universities and colleges.....	288	342	407	500	618	735	860	991	1,117	1,219	1,300	
Federally funded R&D centers:												
Universities and colleges.....	143	159	181	204	221	244	246	251	267	280	284	
	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	
Total R&D performance	28,830	29,660	31,692	34,165	36,877	39,480	43,567	47,744	53,753	61,882	71,470	
Private	22,877	23,174	24,649	26,655	28,798	30,707	34,214	37,705	42,719	49,655	57,740	
Business.....	20,051	20,283	21,592	23,484	25,273	26,773	29,777	32,808	36,952	43,079	50,301	
Universities and colleges.....	979	1,001	1,046	1,099	1,188	1,313	1,416	1,563	1,826	2,122	2,376	
Other nonprofit institutions serving households.....	663	703	755	786	884	996	1,130	1,203	1,450	1,655	1,895	
Federally funded R&D centers:												
Business.....	475	494	550	549	652	735	894	969	1,090	1,177	1,295	
Universities and colleges.....	449	452	478	515	557	632	725	859	1,046	1,200	1,355	
Other nonprofit institutions serving households.....	260	241	229	221	244	258	273	303	356	422	517	
Public	5,953	6,486	7,043	7,510	8,080	8,773	9,353	10,039	11,033	12,226	13,730	
Federal Government.....	4,070	4,440	4,805	5,077	5,401	5,764	6,018	6,254	6,704	7,302	8,120	
State and local government ¹	175	206	239	265	282	299	314	345	396	442	481	
Universities and colleges.....	1,423	1,554	1,698	1,847	2,040	2,292	2,519	2,816	3,205	3,650	4,162	
Federally funded R&D centers:												
Universities and colleges.....	286	286	300	321	356	418	502	623	728	833	967	
	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992
Total R&D performance	81,986	91,156	100,995	114,698	128,598	135,418	143,068	151,726	160,792	166,992	175,942	180,270
Private	67,003	75,177	83,478	95,252	107,005	111,763	118,624	125,540	132,626	137,197	145,270	148,414
Business.....	58,897	66,711	74,380	85,170	95,771	99,465	105,487	111,047	116,938	120,421	127,157	129,264
Universities and colleges.....	2,599	2,770	2,956	3,244	3,608	4,024	4,462	4,953	5,398	5,753	6,132	6,503
Other nonprofit institutions serving households.....	2,104	2,176	2,338	2,696	3,122	3,587	3,704	4,200	4,708	5,121	5,921	6,358
Federally funded R&D centers:												
Business.....	1,408	1,509	1,606	1,754	1,876	1,910	2,013	2,141	2,217	2,345	2,308	2,380
Universities and colleges.....	1,415	1,434	1,565	1,732	1,927	2,151	2,366	2,576	2,681	2,751	2,850	2,942
Other nonprofit institutions serving households.....	580	577	632	656	702	627	592	622	684	806	902	965
Public	14,983	15,979	17,517	19,446	21,592	23,655	24,444	26,186	28,167	29,795	30,672	31,856
Federal Government.....	8,798	9,325	10,270	11,421	12,647	13,742	13,536	14,220	15,132	15,690	15,574	15,906
State and local government ¹	500	504	507	529	561	584	637	668	659	653	618	599
Universities and colleges.....	4,598	4,962	5,389	5,931	6,647	7,442	8,270	9,209	10,207	11,194	12,115	12,951
Federally funded R&D centers:												
Universities and colleges.....	1,087	1,188	1,350	1,566	1,737	1,887	2,001	2,089	2,168	2,258	2,365	2,400
	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Total R&D performance	180,779	185,006	198,827	212,665	228,348	241,738	260,247	283,000	291,344	289,952	304,032	319,709
Private	147,586	151,036	164,230	177,425	191,854	203,914	220,732	240,788	244,958	239,057	248,542	260,023
Business.....	127,857	130,549	143,181	156,144	170,108	181,384	196,947	214,584	216,403	207,700	214,779	224,872
Universities and colleges.....	6,816	7,114	7,382	7,596	7,879	8,304	8,832	9,544	10,362	11,348	12,520	13,603
Other nonprofit institutions serving households.....	6,911	7,000	7,070	7,065	7,349	7,947	8,353	9,583	10,717	11,995	12,733	12,557
Federally funded R&D centers:												
Business.....	2,017	2,240	2,310	2,333	2,176	2,124	2,003	2,011	2,075	2,308	2,526	2,618
Universities and colleges.....	2,967	3,041	3,087	3,064	3,099	3,004	2,986	3,044	3,235	3,409	3,508	3,743
Other nonprofit institutions serving households.....	1,018	1,091	1,199	1,224	1,243	1,152	1,612	2,023	2,166	2,298	2,475	2,631
Public	33,193	33,970	34,597	35,239	36,494	37,823	39,515	42,211	46,386	50,895	55,490	59,686
Federal Government.....	16,468	16,561	16,438	16,366	16,749	16,812	16,879	17,452	19,167	20,754	22,954	25,231
State and local government ¹	603	594	584	584	620	667	696	735	798	852	935	1,070
Universities and colleges.....	13,729	14,471	15,210	15,864	16,632	17,650	19,154	21,165	23,244	25,519	27,674	29,362
Federally funded R&D centers:												
Universities and colleges.....	2,393	2,345	2,364	2,425	2,494	2,695	2,786	2,859	3,177	3,770	3,927	4,024

R&D Research and development
1. Excludes universities and colleges.

Table 3.2. Real Domestic R&D Output by Performer, 1959–2004

[Millions of chained (2000) dollars]

	1959	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969
Total R&D performance	34,832	38,481	40,816	43,927	49,482	53,841	57,055	61,943	64,292	66,571	68,194
Private	29,444	32,464	34,102	36,374	40,756	43,795	45,928	49,951	51,708	53,777	55,094
Business	26,671	29,206	30,196	32,274	36,139	38,573	40,478	44,213	45,377	47,319	48,584
Universities and colleges	713	869	1,026	1,188	1,356	1,548	1,766	1,982	2,163	2,260	2,274
Other nonprofit institutions serving households	446	522	648	791	964	1,105	1,266	1,315	1,505	1,486	1,414
Federally funded R&D centers:											
Business	1,024	1,177	1,375	1,080	1,060	1,179	959	907	1,040	1,013	1,109
Universities and colleges	480	524	599	692	835	945	956	978	1,024	1,060	1,062
Other nonprofit institutions serving households	110	166	258	349	402	445	503	556	600	639	651
Public	5,388	6,017	6,714	7,553	8,726	10,045	11,127	11,992	12,584	12,794	13,099
Federal Government	4,182	4,615	5,073	5,594	6,400	7,349	8,074	8,580	8,847	8,816	8,954
State and local government ¹	132	145	158	172	177	191	231	272	306	340	369
Universities and colleges	719	859	1,027	1,270	1,584	1,881	2,194	2,505	2,769	2,959	3,099
Federally funded R&D centers:											
Universities and colleges	356	398	456	517	565	624	628	635	662	680	678

	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980
Total R&D performance	66,371	65,733	68,903	72,679	69,342	64,783	67,769	70,235	74,085	78,421	81,002
Private	52,667	51,359	53,591	56,703	54,150	50,388	53,220	55,467	58,878	62,927	65,441
Business	46,160	44,951	46,944	49,958	47,522	43,932	46,319	48,263	50,929	54,593	57,010
Universities and colleges	2,253	2,219	2,274	2,338	2,233	2,154	2,202	2,300	2,516	2,689	2,693
Other nonprofit institutions serving households	1,525	1,557	1,641	1,672	1,662	1,635	1,758	1,770	1,998	2,098	2,148
Federally funded R&D centers:											
Business	1,095	1,096	1,195	1,169	1,225	1,206	1,390	1,425	1,502	1,492	1,468
Universities and colleges	1,035	1,001	1,038	1,095	1,048	1,037	1,127	1,264	1,442	1,520	1,535
Other nonprofit institutions serving households	599	535	498	471	459	424	424	446	491	534	586
Public	13,704	14,375	15,312	15,976	15,192	14,395	14,548	14,768	15,207	15,494	15,562
Federal Government	9,369	9,840	10,447	10,801	10,156	9,458	9,361	9,200	9,239	9,253	9,203
State and local government ¹	402	456	519	563	530	490	489	508	546	560	545
Universities and colleges	3,275	3,444	3,693	3,929	3,836	3,761	3,918	4,143	4,418	4,625	4,718
Federally funded R&D centers:											
Universities and colleges	658	634	653	683	670	686	780	917	1,004	1,056	1,096

	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992
Total R&D performance	82,973	86,015	91,573	99,598	108,588	111,817	115,911	120,874	126,545	131,638	137,060	141,548
Private	67,810	70,937	75,690	82,712	90,355	92,285	96,107	100,013	104,378	108,151	113,166	116,534
Business	59,607	62,948	67,441	73,957	80,869	82,130	85,464	88,467	92,031	94,927	99,056	101,498
Universities and colleges	2,630	2,614	2,680	2,817	3,047	3,323	3,615	3,946	4,248	4,535	4,777	5,107
Other nonprofit institutions serving households	2,129	2,053	2,120	2,341	2,637	2,962	3,001	3,346	3,705	4,037	4,613	4,993
Federally funded R&D centers:												
Business	1,425	1,424	1,456	1,523	1,584	1,577	1,631	1,705	1,745	1,849	1,798	1,869
Universities and colleges	1,432	1,353	1,419	1,504	1,627	1,776	1,917	2,052	2,110	2,168	2,220	2,310
Other nonprofit institutions serving households	587	545	573	569	592	518	479	495	538	635	703	758
Public	15,163	15,078	15,883	16,886	18,232	19,532	19,804	20,861	22,167	23,487	23,894	25,013
Federal Government	8,904	8,800	9,312	9,917	10,679	11,347	10,966	11,328	11,909	12,368	12,133	12,490
State and local government ¹	506	476	460	459	474	482	516	532	518	514	481	470
Universities and colleges	4,653	4,682	4,886	5,150	5,612	6,145	6,700	7,336	8,033	8,824	9,437	10,169
Federally funded R&D centers:												
Universities and colleges	1,100	1,121	1,224	1,360	1,467	1,558	1,621	1,665	1,706	1,780	1,842	1,884

	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Total R&D performance	142,401	146,456	161,799	182,177	205,077	229,411	255,691	283,000	300,395	302,421	319,045	335,371
Private	116,254	119,564	133,645	151,990	172,302	193,516	216,868	240,788	252,568	249,337	260,814	272,761
Business	100,714	103,346	116,516	133,759	152,772	172,135	193,499	214,584	223,126	216,631	225,385	235,888
Universities and colleges	5,369	5,632	6,007	6,507	7,076	7,880	8,677	9,544	10,684	11,836	13,138	14,270
Other nonprofit institutions serving households	5,444	5,542	5,754	6,052	6,600	7,542	8,206	9,583	11,050	12,511	13,362	13,172
Federally funded R&D centers:												
Business	1,589	1,774	1,880	1,999	1,954	2,016	1,968	2,011	2,139	2,407	2,651	2,746
Universities and colleges	2,337	2,407	2,512	2,625	2,783	2,851	2,934	3,044	3,335	3,556	3,682	3,926
Other nonprofit institutions serving households	802	864	976	1,048	1,116	1,093	1,584	2,023	2,234	2,396	2,597	2,760
Public	26,146	26,892	28,154	30,187	32,775	35,895	38,823	42,211	47,827	53,083	58,230	62,610
Federal Government	12,972	13,110	13,377	14,020	15,042	15,955	16,583	17,452	19,763	21,647	24,088	26,467
State and local government ¹	475	470	475	500	557	633	684	735	823	889	981	1,122
Universities and colleges	10,815	11,455	12,378	13,590	14,937	16,750	18,819	21,165	23,966	26,616	29,040	30,801
Federally funded R&D centers:												
Universities and colleges	1,885	1,856	1,924	2,077	2,240	2,557	2,737	2,859	3,275	3,932	4,121	4,221

R&D Research and development

1. Excludes universities and colleges.

NOTE: Implemented using the aggregate output price index.

Table 4.1. Aggregate Input Price Indexes for R&D Investment, 1959–2004

[Index numbers, 2000=100]

	1959	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969
Total R&D investment	19.0	19.0	19.4	19.7	20.0	20.5	21.1	21.9	22.7	23.8	25.1
Federal extramural	24.4	24.5	24.7	25.7	24.4	25.1	25.6	26.0	27.3	28.4	30.1
Federal intramural	12.1	11.2	12.2	12.2	13.4	14.5	15.6	16.5	17.4	18.7	20.1
Non-Federal domestic	17.5	18.0	18.2	17.8	19.9	19.9	20.3	21.5	21.7	22.7	23.6
Total R&D performance	19.0	19.0	19.4	19.6	20.0	20.6	21.1	21.9	22.7	23.8	25.1
Private	21.0	21.2	21.4	21.8	21.9	22.3	22.8	23.4	24.2	25.3	26.5
Business	21.5	21.8	22.1	22.4	22.6	23.0	23.4	24.1	24.8	25.9	27.1
Universities and colleges	12.5	12.7	13.0	13.5	14.0	14.5	15.1	15.9	16.8	17.8	18.9
Other nonprofit institutions serving households	16.6	16.7	16.7	16.9	17.2	17.6	18.0	18.7	19.3	20.1	20.8
Federally funded R&D centers:											
Business	21.1	20.8	20.8	21.4	20.3	20.9	21.6	22.4	23.4	24.5	26.2
Universities and colleges	24.1	23.7	23.6	24.4	23.1	23.9	24.5	25.3	26.4	27.6	29.3
Other nonprofit institutions serving households	25.5	26.1	26.7	28.0	26.6	27.4	27.8	27.8	29.2	30.4	32.1
Public	12.4	11.7	12.5	12.5	13.5	14.4	15.3	16.3	17.1	18.3	19.6
Federal Government	12.1	11.2	12.2	12.2	13.4	14.5	15.6	16.5	17.4	18.7	20.1
State and local government ¹	17.8	18.0	18.0	18.2	18.5	18.9	19.4	20.1	20.7	21.5	22.3
Universities and colleges	12.5	12.6	12.9	13.4	13.8	14.3	14.9	15.7	16.6	17.6	18.7
Federally funded R&D centers:											
Universities and colleges	20.5	20.0	19.8	20.3	19.3	19.9	20.5	21.4	22.3	23.4	25.0

	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980
Total R&D investment	26.5	28.1	29.5	31.2	34.0	37.3	39.5	42.2	45.1	48.8	53.4
Federal extramural	31.7	33.5	36.2	38.0	41.0	44.9	46.9	49.6	52.5	55.9	60.7
Federal intramural	21.9	24.2	26.3	28.1	30.2	33.5	35.8	39.1	41.4	44.4	48.7
Non-Federal domestic	24.9	26.0	26.2	27.9	30.8	33.7	35.9	38.5	41.6	45.6	50.2
Total R&D performance	26.5	28.1	29.5	31.2	34.0	37.3	39.5	42.2	45.1	48.8	53.4
Private	27.9	29.3	30.6	32.3	35.3	38.6	40.9	43.5	46.5	50.4	55.1
Business	28.6	30.0	31.3	33.1	36.1	39.5	41.7	44.4	47.5	51.4	56.1
Universities and colleges	20.0	21.0	21.9	23.2	25.4	27.5	29.1	31.0	33.3	36.3	40.1
Other nonprofit institutions serving households	21.5	22.3	23.0	24.3	27.9	30.6	32.7	34.9	37.5	41.3	46.6
Federally funded R&D centers:											
Business	27.7	29.4	31.4	33.0	35.7	39.9	41.8	44.9	47.9	51.7	57.2
Universities and colleges	30.9	32.6	34.9	36.5	39.5	43.5	45.5	48.3	51.3	54.9	60.1
Other nonprofit institutions serving households	33.7	35.6	38.3	40.0	43.3	47.3	49.6	52.3	55.4	59.1	64.1
Public	21.1	23.0	24.7	26.3	28.5	31.4	33.5	36.3	38.6	41.7	46.0
Federal Government	21.9	24.2	26.3	28.1	30.2	33.5	35.8	39.1	41.4	44.4	48.7
State and local government ¹	23.1	23.9	24.7	26.1	29.8	32.8	35.0	37.3	40.1	44.2	49.6
Universities and colleges	19.8	20.9	21.9	23.2	25.4	27.5	29.3	31.2	33.5	36.6	40.5
Federally funded R&D centers:											
Universities and colleges	26.6	28.2	30.2	31.8	34.5	38.5	40.4	43.4	46.4	50.3	55.9

	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992
Total R&D investment	58.4	62.1	64.6	67.0	69.2	71.0	73.1	75.7	78.6	81.2	83.6	85.9
Federal extramural	65.4	69.9	72.9	75.4	77.3	79.0	79.8	80.6	82.8	85.0	86.8	89.0
Federal intramural	53.0	56.3	58.5	60.4	62.3	64.3	66.4	69.1	71.0	74.3	77.4	79.2
Non-Federal domestic	55.6	58.8	61.1	63.7	66.0	67.8	70.6	74.4	78.0	80.7	83.2	85.6
Total R&D performance	58.4	62.1	64.6	67.1	69.2	70.9	73.0	75.7	78.6	81.2	83.6	85.9
Private	60.3	64.0	66.6	69.1	71.2	72.8	74.9	77.5	80.6	83.0	85.3	87.5
Business	61.4	65.1	67.7	70.2	72.4	74.0	76.0	78.6	81.7	84.1	86.3	88.6
Universities and colleges	44.0	47.4	49.9	52.7	55.5	57.8	60.8	63.9	67.4	70.8	73.6	76.4
Other nonprofit institutions serving households	51.6	54.1	55.8	57.9	59.2	61.0	63.5	66.8	69.3	71.9	75.1	77.4
Federally funded R&D centers:												
Business	62.8	67.8	70.7	72.9	75.3	77.0	78.0	79.8	82.5	85.0	87.1	89.0
Universities and colleges	65.2	70.0	73.0	75.6	77.5	79.2	80.0	81.1	83.4	85.7	87.4	89.7
Other nonprofit institutions serving households	68.8	73.2	76.0	78.4	79.9	81.6	82.4	82.5	84.3	86.4	88.0	90.1
Public	50.2	53.5	55.7	58.0	60.2	62.2	64.6	67.3	69.8	73.0	75.9	78.0
Federal Government	53.0	56.3	58.5	60.4	62.3	64.3	66.4	69.1	71.0	74.3	77.4	79.2
State and local government ¹	54.8	57.4	59.2	61.3	62.6	64.4	66.9	70.2	72.7	75.2	78.2	80.1
Universities and colleges	44.3	47.5	49.8	52.6	55.3	57.6	60.8	63.5	66.8	70.1	72.7	75.3
Federally funded R&D centers:												
Universities and colleges	61.6	66.6	69.7	72.0	74.6	76.3	77.4	79.7	82.7	85.2	87.5	89.4

	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Total R&D investment	87.9	89.5	90.8	92.5	94.3	95.4	96.9	100.0	102.4	105.1	108.3	112.2
Federal extramural	90.2	91.6	92.9	93.7	95.5	96.6	97.7	100.0	101.9	103.9	106.7	110.4
Federal intramural	82.0	84.9	88.2	90.6	92.8	94.5	97.0	100.0	102.5	106.1	110.4	116.0
Non-Federal domestic	87.8	89.4	90.5	92.4	94.0	95.2	96.7	100.0	102.6	105.4	108.6	112.3
Total R&D performance	87.9	89.5	90.8	92.5	94.3	95.4	96.9	100.0	102.4	105.1	108.3	112.2
Private	89.4	90.8	91.8	93.3	94.9	95.9	97.0	100.0	102.3	104.8	107.7	111.3
Business	90.5	91.8	92.4	93.9	95.4	96.2	97.2	100.0	102.3	104.8	107.6	111.0
Universities and colleges	78.6	81.2	83.9	86.4	88.8	91.5	95.5	100.0	103.8	107.5	112.2	117.7
Other nonprofit institutions serving households	78.9	80.5	84.1	86.7	89.3	92.0	94.5	100.0	101.6	102.9	106.6	110.5
Federally funded R&D centers:												
Business	90.2	91.6	93.7	94.6	95.9	96.7	97.5	100.0	102.1	104.4	107.1	110.6
Universities and colleges	90.7	92.1	93.6	94.2	95.8	96.8	97.8	100.0	101.7	103.5	106.0	109.6
Other nonprofit institutions serving households	91.2	92.7	93.6	94.2	95.9	96.9	97.8	100.0	101.8	103.8	106.2	109.7
Public	80.5	83.1	86.0	88.5	90.8	92.9	96.2	100.0	103.2	106.7	111.3	116.8
Federal Government	82.0	84.9	88.2	90.6	92.8	94.5	97.0	100.0	102.5	106.1	110.4	116.0
State and local government ¹	81.7	83.3	86.5	88.7	90.8	93.0	95.2	100.0	101.6	102.8	106.0	109.9
Universities and colleges	77.7	80.3	82.9	85.7	88.2	91.0	95.3	100.0	104.0	107.7	112.9	118.9
Federally funded R&D centers:												
Universities and colleges	90.6	92.0	94.4	95.5	96.7	97.2	97.7	100.0	101.8	104.0	106.2	109.4

R&D Research and development
1. Excludes universities and colleges.

Table 4.2. Alternative Price Indexes for R&D Investment, 1959–2004

[Index numbers, 2000=100]

	1959	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	
Aggregate output price index	40.1	39.8	39.6	39.4	39.0	39.1	39.2	39.6	40.4	41.2	41.9	
Input price index.....	19.0	19.0	19.4	19.7	20.0	20.5	21.1	21.9	22.7	23.8	25.1	
	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	
Aggregate output price index	43.4	45.1	46.0	47.0	53.2	60.9	64.3	68.0	72.6	78.9	88.2	
Input price index.....	26.5	28.1	29.5	31.2	34.0	37.3	39.5	42.2	45.1	48.8	53.4	
	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992
Aggregate output price index	98.8	106.0	110.3	115.2	118.4	121.1	123.4	125.5	127.1	126.9	128.4	127.4
Input price index.....	58.4	62.1	64.6	67.0	69.2	71.0	73.1	75.7	78.6	81.2	83.6	85.9
	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Aggregate output price index	127.0	126.3	122.9	116.7	111.3	105.4	101.8	100.0	97.0	95.9	95.3	95.3
Input price index.....	87.9	89.5	90.8	92.5	94.3	95.4	96.9	100.0	102.4	105.1	108.3	112.2

R&D Research and development

Table 5.1. Private Business Investment in R&D by Industry, 1987-2004

(Millions of dollars)

NAICS code	Industry	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
	All for-profit industries¹	69,494	75,718	83,376	87,345	96,495	100,589	101,398	104,311	116,139	128,880	142,502	153,976	171,426	193,562	195,789	186,919	192,542	200,897
	Own account.....	53,232	57,784	63,773	65,801	72,968	75,937	75,787	77,581	85,851	96,376	107,037	116,046	126,949	140,267	147,749	138,662	136,911	139,272
	Purchased R&D.....	16,262	17,933	19,603	21,544	23,526	24,652	25,611	26,730	30,289	32,505	35,465	37,930	44,477	53,295	48,040	48,257	55,631	61,625
325	Chemical manufacturing	10,635	12,074	13,118	14,410	15,777	16,603	18,180	18,403	19,559	20,162	21,615	24,243	26,924	31,148	32,430	34,273	41,555	48,911
	Own account.....	4,577	5,193	5,614	6,123	6,628	6,819	7,486	7,281	7,294	7,438	7,588	9,307	9,174	9,667	12,482	12,012	13,567	15,991
	Purchased R&D.....	6,058	6,880	7,505	8,287	9,149	9,784	10,694	11,122	12,265	12,724	14,027	14,936	17,749	21,481	19,947	22,260	27,989	32,920
3254	Pharmaceutical and medicine manufacturing	5,569	6,443	7,101	7,694	8,793	9,784	11,082	11,735	12,835	12,805	14,815	14,374	18,425	22,136	20,800	25,338	33,050	40,597
	Own account.....	1,192	1,434	1,602	1,663	1,986	2,305	2,783	2,901	2,922	2,659	3,242	2,852	3,758	4,005	4,836	6,289	8,282	10,891
	Purchased R&D.....	4,377	5,009	5,499	6,031	6,806	7,479	8,299	8,834	9,913	10,146	11,572	11,522	14,666	18,131	15,964	19,050	24,769	29,706
3251-53, 3255-56, 3259	Chemicals minus pharmaceutical and medicine manufacturing	5,067	5,630	6,017	6,716	6,985	6,819	7,098	6,668	6,725	7,357	6,801	9,869	8,499	9,011	11,629	8,934	8,505	8,313
	Own account.....	3,385	3,759	4,012	4,460	4,642	4,514	4,703	4,380	4,373	4,779	4,346	6,455	5,416	5,662	7,646	5,724	5,285	5,100
	Purchased R&D.....	1,681	1,871	2,006	2,256	2,343	2,305	2,396	2,287	2,352	2,578	2,455	3,414	3,083	3,349	3,983	3,211	3,220	3,213
334	Computer and electronic product manufacturing	14,527	15,062	15,170	14,993	15,159	16,154	16,137	18,120	22,327	25,962	30,669	32,858	32,231	42,417	46,289	44,170	42,979	41,557
	Own account.....	12,766	13,231	13,326	13,025	13,135	14,017	14,003	15,739	19,328	22,506	26,667	27,956	27,225	35,223	38,906	37,576	36,273	35,041
	Purchased R&D.....	1,761	1,831	1,844	1,968	2,025	2,137	2,134	2,381	2,999	3,456	4,002	4,902	5,006	7,194	7,383	6,594	6,707	6,515
3341	Computer and peripheral equipment manufacturing	3,796	3,940	3,979	3,882	3,925	4,188	4,183	4,712	5,783	6,719	7,943	8,415	4,204	5,153	3,266	3,929	3,347	5,725
	Own account.....	3,403	3,534	3,571	3,452	3,488	3,724	3,723	4,192	5,140	5,975	7,071	7,486	3,670	4,468	2,827	3,409	2,880	4,997
	Purchased R&D.....	392	406	408	430	437	464	461	519	643	744	873	929	534	685	439	520	466	728
3342	Communications equipment manufacturing	1,504	1,563	1,572	1,313	1,319	1,398	1,394	1,554	1,956	2,286	2,715	8,421	7,183	13,319	18,647	12,453	11,690	8,549
	Own account.....	1,198	1,246	1,258	971	964	1,026	1,025	1,139	1,415	1,663	1,990	6,575	5,484	10,271	14,744	9,766	9,082	6,499
	Purchased R&D.....	306	318	314	341	355	372	370	415	542	624	725	1,846	1,699	3,048	3,903	2,688	2,609	2,050
3344	Semiconductor and other electronic component manufacturing	6,567	6,797	6,835	7,016	7,094	7,568	7,554	8,494	10,438	12,137	14,346	9,469	10,906	12,900	14,980	15,689	16,576	17,700
	Own account.....	5,929	6,137	6,171	6,315	6,379	6,810	6,801	7,649	9,384	10,919	12,924	8,453	9,697	11,389	13,421	14,076	14,797	15,753
	Purchased R&D.....	638	660	664	701	715	758	754	846	1,054	1,218	1,422	1,016	1,209	1,512	1,560	1,613	1,779	1,947
3345	Navigational, measuring, electromedical, and control instruments manufacturing	2,404	2,496	2,517	2,515	2,551	2,712	2,717	3,034	3,750	4,355	5,115	5,975	9,194	10,739	8,308	11,523	10,659	8,470
	Own account.....	2,006	2,076	2,087	2,049	2,064	2,201	2,199	2,470	3,036	3,537	4,194	4,929	7,716	8,837	6,941	9,820	8,897	6,812
	Purchased R&D.....	398	419	429	466	487	511	518	564	715	818	921	1,046	1,478	1,901	1,367	1,703	1,762	1,659
3343, 3346	Other computer and electronic products manufacturing	257	266	267	268	270	288	288	325	400	464	550	578	744	306	1,089	576	708	1,113
	Own account.....	230	238	239	238	240	256	256	289	354	412	489	513	659	257	974	506	617	981
	Purchased R&D.....	27	28	28	30	30	32	32	36	45	52	61	65	85	48	115	71	91	132
336	Transportation equipment manufacturing	15,965	16,400	16,987	16,331	16,938	18,804	18,835	19,848	21,501	23,035	22,454	21,389	24,794	24,312	22,050	22,510	27,204	27,553
	Own account.....	12,476	12,766	13,150	12,536	12,988	14,591	14,413	15,057	16,011	17,104	16,633	15,749	17,744	16,448	15,744	16,275	19,588	19,487
	Purchased R&D.....	3,488	3,634	3,837	3,794	3,951	4,213	4,422	4,791	5,490	5,931	5,821	5,640	7,050	7,864	6,306	6,235	7,615	8,066
3361-63	Motor vehicles, bodies and trailers, and parts manufacturing	7,903	8,492	9,399	9,066	9,522	9,719	11,218	12,547	14,236	15,423	14,853	14,268	18,667	19,403	16,923	16,098	18,166	16,625
	Own account.....	5,552	5,981	6,642	6,347	6,661	6,802	7,904	8,838	9,905	10,713	10,271	9,793	12,712	12,709	11,559	10,938	12,067	10,804
	Purchased R&D.....	2,351	2,511	2,756	2,719	2,861	2,917	3,313	3,709	4,331	4,710	4,582	4,476	5,955	6,694	5,364	5,159	6,099	5,821
3364	Aerospace product and parts manufacturing	7,651	7,507	7,203	6,908	7,051	8,632	7,205	6,905	6,879	7,209	7,203	6,726	5,523	4,222	4,272	5,487	7,981	9,772
	Own account.....	6,558	6,427	6,164	5,874	6,004	7,387	6,143	5,868	5,768	6,039	6,014	5,612	4,499	3,155	3,444	4,512	6,583	7,678
	Purchased R&D.....	1,093	1,080	1,039	1,034	1,047	1,245	1,062	1,037	1,111	1,170	1,188	1,114	1,024	1,067	829	976	1,397	2,094
3365-66, 3369	Other transportation equipment manufacturing	410	402	385	357	366	452	413	397	386	404	399	395	604	688	855	925	1,057	1,156
	Own account.....	366	358	343	315	323	401	366	351	338	353	348	344	533	584	741	825	938	1,005
	Purchased R&D.....	44	44	42	42	43	51	47	46	48	50	51	51	71	104	114	100	119	151
5112	Software publishers	1,588	1,961	2,263	1,658	2,214	2,321	2,952	3,066	3,531	6,255	7,175	9,143	10,742	12,233	13,215	13,452	15,951	16,258
	Own account.....	1,521	1,885	2,185	1,566	2,108	2,212	2,834	2,941	3,368	6,054	6,949	8,881	10,412	11,790	12,870	13,092	15,488	15,736
	Purchased R&D.....	66	75	78	93	106	109	117	125	162	201	226	262	330	443	345	359	463	522
5415	Computer systems design and related services	1,141	1,530	1,811	1,142	1,637	1,679	1,866	1,786	1,973	2,437	3,049	2,913	4,038	5,756	11,666	15,817	14,319	11,196
	Own account.....	1,075	1,437	1,702	997	1,451	1,488	1,659	1,579	1,727	2,145	2,701	2,563	3,565	5,079	10,641	14,470	13,033	10,108
	Purchased R&D.....	66	93	108	145	187	192	207	207	246	292	349	350	473	677	1,024	1,347	1,286	1,088
5417	Scientific R&D services	570	542	1,029	1,970	2,916	2,979	3,047	3,065	3									

Table 5.2. Real Private Business Investment in R&D by Industry, 1987–2004

(Millions of chained (2000) dollars)

NAICS code	Industry	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
	All for-profit industries¹	56,303	60,321	65,618	68,853	75,170	78,982	79,872	82,576	94,510	110,404	127,979	146,125	168,425	193,562	201,871	194,957	202,050	210,739
	Own account	43,128	46,035	50,190	51,870	56,843	59,626	59,698	61,415	69,862	82,559	96,129	110,129	124,727	140,267	152,339	144,625	143,672	146,095
	Purchased R&D	13,175	14,287	15,428	16,983	18,327	19,357	20,174	21,160	24,648	27,845	31,851	35,996	43,698	53,295	49,533	50,332	58,378	64,644
325	Chemical manufacturing	8,617	9,619	10,324	11,359	12,291	13,037	14,321	14,568	15,917	17,272	19,412	23,007	26,452	31,148	33,437	35,746	43,607	51,307
	Own account	3,709	4,137	4,418	4,827	5,163	5,354	5,897	5,764	5,936	6,372	6,815	8,833	9,014	9,667	12,870	12,529	14,236	16,775
	Purchased R&D	4,908	5,481	5,906	6,532	7,127	7,682	8,424	8,804	9,981	10,900	12,598	14,174	17,439	21,481	20,567	23,218	29,371	34,532
3254	Pharmaceutical and medicine manufacturing	4,512	5,133	5,589	6,065	6,849	7,683	8,729	9,290	10,444	10,969	13,305	13,641	18,102	22,136	21,447	26,428	34,682	42,586
	Own account	966	1,142	1,261	1,311	1,547	1,810	2,192	2,296	2,377	2,278	2,912	2,707	3,693	4,005	4,986	6,559	8,691	11,425
	Purchased R&D	3,546	3,991	4,328	4,754	5,302	5,872	6,537	6,994	8,067	8,692	10,393	10,935	14,410	18,131	16,460	19,869	25,992	31,162
3251–53, 3255–56, 3259	Chemicals minus pharmaceutical and medicine manufacturing	4,105	4,485	4,736	5,294	5,441	5,354	5,591	5,278	5,472	6,302	6,108	9,365	8,350	9,011	11,991	9,318	8,925	8,721
	Own account	2,743	2,995	3,157	3,516	3,616	3,544	3,704	3,468	3,558	4,094	3,903	6,126	5,321	5,662	7,884	5,970	5,546	5,350
	Purchased R&D	1,362	1,491	1,578	1,778	1,825	1,810	1,887	1,811	1,914	2,208	2,204	3,239	3,029	3,349	4,107	3,349	3,379	3,371
334	Computer and electronic product manufacturing	11,770	11,999	11,939	11,819	11,809	12,684	12,711	14,344	18,169	22,240	27,543	31,183	31,667	42,417	47,727	46,070	45,102	43,592
	Own account	10,343	10,541	10,487	10,268	10,232	11,006	11,030	12,459	15,729	19,279	23,949	26,531	26,749	35,223	40,115	39,192	38,064	36,758
	Purchased R&D	1,427	1,458	1,451	1,552	1,577	1,678	1,681	1,884	2,440	2,961	3,594	4,652	4,918	7,194	7,612	6,878	7,038	6,835
3341	Computer and peripheral equipment manufacturing	3,075	3,139	3,131	3,060	3,057	3,289	3,295	3,730	4,706	5,756	7,134	7,986	4,131	5,153	3,367	4,098	3,512	6,005
	Own account	2,757	2,815	2,810	2,721	2,717	2,924	2,932	3,319	4,182	5,119	6,350	7,104	3,606	4,468	2,915	3,556	3,023	5,242
	Purchased R&D	318	323	321	339	340	364	363	411	523	637	784	882	524	685	453	542	489	764
3342	Communications equipment manufacturing	1,219	1,245	1,237	1,035	1,028	1,097	1,098	1,230	1,592	1,959	2,438	7,992	7,057	13,319	19,226	12,989	12,268	8,968
	Own account	970	992	990	765	751	805	807	902	1,151	1,424	1,787	6,240	5,388	10,271	15,202	10,185	9,530	6,817
	Purchased R&D	248	253	247	269	276	292	291	328	441	534	651	1,752	1,670	3,048	4,024	2,803	2,738	2,151
3344	Semiconductor and other electronic component manufacturing	5,321	5,415	5,379	5,531	5,527	5,942	5,950	6,724	8,494	10,397	12,884	8,986	10,715	12,900	15,446	16,363	17,394	18,567
	Own account	4,804	4,889	4,857	4,978	4,969	5,347	5,357	6,055	7,637	9,353	11,607	8,022	9,527	11,389	13,838	14,681	15,528	16,525
	Purchased R&D	517	526	523	553	557	595	594	669	857	1,044	1,277	964	1,188	1,512	1,608	1,682	1,866	2,042
3345	Navigational, measuring, electromedical, and control instruments manufacturing	1,948	1,988	1,981	1,983	1,987	2,129	2,140	2,402	3,052	3,731	4,594	5,671	9,033	10,739	8,566	12,018	11,185	8,885
	Own account	1,625	1,654	1,643	1,615	1,608	1,728	1,732	1,955	2,470	3,030	3,767	4,678	7,581	8,837	7,157	10,242	9,336	7,145
	Purchased R&D	322	334	338	368	380	401	408	447	582	701	827	993	1,452	1,901	1,409	1,776	1,849	1,740
3343, 3346	Other computer and electronic products manufacturing	208	212	210	211	210	226	227	257	325	398	494	549	731	306	1,122	601	742	1,167
	Own account	186	190	188	188	187	201	202	229	288	353	439	487	647	257	1,004	528	647	1,029
	Purchased R&D	22	22	22	23	24	25	25	29	37	45	55	62	84	48	118	74	95	138
336	Transportation equipment manufacturing	12,934	13,066	13,369	12,873	13,195	14,765	14,837	15,712	17,497	19,733	20,166	20,298	24,360	24,312	22,735	23,478	28,547	28,903
	Own account	10,108	10,171	10,349	9,882	10,118	11,457	11,353	11,920	13,029	14,652	14,938	14,946	17,433	16,448	16,233	16,975	20,556	20,442
	Purchased R&D	2,826	2,895	3,020	2,991	3,078	3,308	3,483	3,793	4,467	5,080	5,228	5,353	6,926	7,864	6,502	6,503	7,991	8,461
3361–63	Motor vehicles, bodies and trailers, and parts manufacturing	6,403	6,765	7,397	7,147	7,418	7,632	8,836	9,932	11,585	13,212	13,339	13,541	18,340	19,403	17,449	16,790	19,063	17,439
	Own account	4,498	4,765	5,228	5,003	5,189	5,341	6,226	6,997	8,060	9,177	9,224	9,293	12,709	11,918	11,409	12,663	11,333	
	Purchased R&D	1,905	2,000	2,169	2,143	2,229	2,290	2,610	2,936	3,524	4,035	4,115	4,247	5,850	6,694	5,530	5,381	6,400	6,106
3364	Aerospace product and parts manufacturing	6,199	5,980	5,669	5,445	5,493	6,778	5,675	5,466	5,598	6,175	6,469	6,383	5,426	4,222	4,405	5,723	8,375	10,251
	Own account	5,313	5,120	4,851	4,630	4,677	5,800	4,839	4,645	4,694	5,173	5,401	5,326	4,420	3,155	3,551	4,706	6,908	8,054
	Purchased R&D	885	860	817	815	978	978	836	821	904	1,002	1,067	1,057	1,006	1,067	854	1,018	1,466	2,197
3365–66, 3369	Other transportation equipment manufacturing	333	320	303	282	285	355	325	314	314	346	358	375	594	688	881	965	1,109	1,213
	Own account	297	285	270	249	252	315	288	278	275	303	312	326	524	584	764	861	985	1,054
	Purchased R&D	36	35	33	33	33	40	37	36	39	43	46	48	70	104	117	104	124	158
5112	Software publishers	1,286	1,562	1,781	1,307	1,724	1,823	2,325	2,427	2,873	5,359	6,443	8,677	10,554	12,233	13,626	14,030	16,739	17,054
	Own account	1,232	1,502	1,720	1,234	1,642	1,737	2,233	2,328	2,741	5,186	6,241	8,428	10,230	11,790	13,270	13,655	16,253	16,507
	Purchased R&D	54	60	61	73	82	85	92	99	132	172	203	249	324	443	355	375	486	547
5415	Computer systems design and related services	924	1,219	1,425	900	1,276	1,319	1,470	1,414	1,605	2,087	2,739	2,765	3,968	5,756	12,028	16,497	15,026	11,744
	Own account	871	1,145	1,340	786	1,130	1,168	1,307	1,250	1,405	1,837	2,425	2,433	3,503	5,079	10,972	15,092	13,677	10,603
	Purchased R&D	54	74	85	114	146	151	163	164	200	250	313	332	465	677	1,056	1,405	1,350	1,141
5417	Scientific R&D services	462	432	809	1,553	2,271	2,339	2,400	2,427	2,534	3,093	4							

Table 6.1. Private Industry Value Added and Private Industry Value Added With R&D Treated as Investment, 1987–2004

	1987	1988	1989	1990	1991	1992	1993	1994	1995
Millions of dollars									
Current-dollar value added:									
Unadjusted for R&D as investment	3,807,477	4,106,418	4,425,072	4,676,733	4,815,975	5,121,262	5,418,437	5,812,421	6,113,150
Adjusted for R&D as investment.....	3,873,074	4,177,849	4,503,772	4,759,012	4,907,014	5,216,006	5,513,600	5,910,107	6,222,274
Percent									
Percent change in value added ¹	1.7	1.7	1.8	1.8	1.9	1.9	1.8	1.7	1.8
	1996	1997	1998	1999	2000	2001	2002	2003	2004
Millions of dollars									
Current-dollar value added:									
Unadjusted for R&D as investment	6,494,969	6,880,515	7,259,732	7,711,009	8,167,966	8,380,387	8,609,304	8,988,042	9,633,671
Adjusted for R&D as investment.....	6,616,445	7,015,223	7,405,170	7,870,164	8,346,448	8,560,636	8,772,209	9,153,452	9,799,940
Percent									
Percent change in value added ¹	1.9	2.0	2.0	2.1	2.2	2.2	1.9	1.8	1.7
Percent change from preceding period at annual rates									
	1988	1989	1990	1991	1992	1993	1994	1995	1996
Current-dollar value added:									
Unadjusted for R&D as investment	7.9	7.8	5.7	3.0	6.3	5.8	7.3	5.2	6.2
Adjusted for R&D as investment.....	7.9	7.8	5.7	3.1	6.3	5.7	7.2	5.3	6.3
	1997	1998	1999	2000	2001	2002	2003	2004	
Current-dollar value added:									
Unadjusted for R&D as investment	5.9	5.5	6.2	5.9	2.6	2.7	4.4	7.2	
Adjusted for R&D as investment.....	6.0	5.6	6.3	6.1	2.6	2.5	4.3	7.1	

R&D Research and development

1. Corresponds to published values.

2. Adjusted value added incorporates the impact of treating R&D as investment and the removal of the R&D software double-count.

3. Calculated as the ratio of the adjustment to unadjusted value added.

Table 6.2. Average Annual Effect of Treating R&D as Investment
Levels and Growth Rates of Gross Output, Intermediate Inputs, and Value Added, 1987–2004
 (Percent)

NAICS code	Industry	Average annual percent effect on levels			Average annual growth rates					
					Gross output		Intermediate inputs		Value added	
		Gross output	Inter-mediate inputs	Value added	Unadjusted ¹	Adjusted for R&D and for R&D software double-count	Unadjusted ¹	Adjusted for R&D and for R&D software double-count	Unadjusted ¹	Adjusted for R&D and for R&D software double-count
3254	Pharmaceutical and medicine manufacturing:									
	Nominal	3.8	-22.8	38.4	8.6	8.9	8.0	6.7	9.7	10.5
	Input price index				3.7	4.0	4.8	3.3	2.4	4.4
	Aggregate output price index				3.7	4.2	4.8	2.1	2.4	5.5
3251–53, 3255–56, 3259	Chemicals minus pharmaceutical and medicine manufacturing:									
	Nominal	1.7	-1.4	7.9	3.7	3.6	3.4	3.4	4.4	4.3
	Input price index				1.2	1.2	0.5	0.5	2.5	2.3
	Aggregate output price index				1.2	1.2	0.5	0.5	2.5	2.6
3341	Computer and peripheral equipment manufacturing:									
	Nominal	5.0	-0.9	29.8	1.5	1.5	1.3	1.3	2.4	2.2
	Input price index				19.4	18.2	8.0	8.0	102.8	60.4
	Aggregate output price index				19.4	18.5	8.0	8.0	102.8	62.7
3342	Communications equipment manufacturing:									
	Nominal	4.7	-2.5	22.1	4.2	4.4	5.5	5.4	1.6	3.4
	Input price index				6.8	6.7	8.1	8.1	5.3	5.2
	Aggregate output price index				6.8	7.0	8.1	8.0	5.3	5.9
3344	Semiconductor and other electronic component manufacturing:									
	Nominal	9.6	-1.9	25.7	5.9	5.9	6.6	6.5	5.4	5.4
	Input price index				20.2	18.7	8.3	8.4	38.7	31.3
	Aggregate output price index				20.2	19.2	8.3	8.3	38.7	32.4
3345	Navigational, measuring, electromedical, and control instruments manufacturing:									
	Nominal	4.9	-2.2	12.2	2.7	2.8	3.0	2.9	2.6	3.0
	Input price index				1.4	1.5	4.5	4.5	-1.6	-1.1
	Aggregate output price index				1.4	1.7	4.5	4.4	-1.6	-0.7
3343, 3346	Other computer and electronic products manufacturing:									
	Nominal	2.5	-0.5	9.1	2.6	2.7	2.5	2.4	3.1	3.5
	Input price index				4.2	4.3	5.4	5.4	1.6	1.6
	Aggregate output price index				4.2	4.4	5.4	5.3	1.6	2.0
3361–63	Motor vehicles, bodies and trailers, and parts manufacturing:									
	Nominal	2.5	-1.5	14.5	4.5	4.5	4.9	4.8	3.9	3.9
	Input price index				3.6	3.5	3.8	3.8	3.1	2.9
	Aggregate output price index				3.6	3.6	3.8	3.7	3.1	3.4
3364	Aerospace product and parts manufacturing:									
	Nominal	4.7	-1.6	14.3	1.3	1.2	2.2	2.2	0.6	0.6
	Input price index				-1.0	-1.0	0.8	0.8	-3.0	-2.9
	Aggregate output price index				-1.0	-0.8	0.8	0.8	-3.0	-2.4
3365–66, 3369	Other transportation equipment manufacturing:									
	Nominal	1.4	-0.3	4.1	4.6	4.7	6.3	6.3	2.9	3.0
	Input price index				2.4	2.4	4.5	4.5	0.1	0.2
	Aggregate output price index				2.4	2.5	4.5	4.5	0.1	0.4
5112	Software publishers:									
	Nominal	6.7	-0.9	14.2	14.7	14.9	15.1	15.2	14.5	14.8
	Input price index				23.9	23.1	16.0	16.0	32.8	30.0
	Aggregate output price index				23.9	23.7	16.0	16.0	32.8	31.1
5415	Computer systems design and related services:									
	Nominal	1.4	-2.3	2.4	12.2	12.3	17.6	17.6	11.3	11.4
	Input price index				10.5	10.4	17.7	17.8	9.1	9.0
	Aggregate output price index				10.5	10.6	17.7	17.7	9.1	9.3
5417	Scientific R&D services:									
	Nominal	7.5	-4.1	12.7	9.0	9.4	11.7	11.8	7.8	8.5
	Input price index				5.1	6.1	9.9	10.0	3.0	4.6
	Aggregate output price index				5.1	8.2	9.9	9.8	3.0	7.6
	All other for-profit industries:									
	Nominal	0.3	-0.2	0.7	5.5	5.5	5.3	5.3	5.7	5.7
	Input price index				2.8	2.8	2.5	2.5	3.0	3.0
	Aggregate output price index				2.8	2.8	2.5	2.5	3.0	3.1

NAICS North American Industry Classification System

R&D Research and development

1. Corresponds to estimates of gross domestic product by industry.

Table 7.1A. Private Business Gross Output by Industry With R&D Treated as Investment, 1987–2004

(Millions of dollars)

NAICS code	Industry	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
	All for-profit industries.....	7,396,586	8,031,664	8,550,796	8,981,089	9,046,871	9,525,615	10,056,510	10,764,999	11,486,599	12,209,756	12,979,896	13,652,126	14,523,398	15,646,195	15,689,050	15,859,818	16,625,593	17,974,661
325	Chemical manufacturing....	242,651	275,330	298,646	306,955	312,933	322,633	331,492	351,327	377,666	383,477	412,668	415,984	420,133	447,113	437,290	455,449	487,591	532,295
3254	Pharmaceutical and medicine manufacturing.....	39,447	45,318	51,515	56,791	64,943	68,136	71,556	76,429	81,538	86,503	93,081	103,716	111,076	118,267	131,871	144,774	157,231	166,194
3251-53, 3255-56, 3259	Chemicals minus pharmaceutical and medicine manufacturing.....	203,204	230,012	247,130	250,164	247,990	254,496	259,936	274,898	296,129	296,974	319,587	312,268	309,057	328,845	305,420	310,675	330,360	366,101
334	Computer and electronic product manufacturing....	229,690	250,878	255,299	263,938	266,091	283,283	295,979	332,446	387,333	415,875	457,793	454,450	479,682	533,687	455,314	385,782	383,128	391,113
3341	Computer and peripheral equipment manufacturing.....	57,406	64,456	61,847	61,263	57,276	63,272	65,729	74,751	88,218	99,790	109,409	110,838	106,940	106,179	88,575	72,032	68,718	67,283
3342	Communications equipment manufacturing.....	36,454	38,655	38,514	41,295	40,484	45,458	48,276	56,436	62,941	72,531	85,682	89,115	101,202	128,404	113,892	72,922	69,488	63,641
3344	Semiconductor and other electronic component manufacturing.....	55,194	62,198	66,648	67,458	72,223	78,835	86,190	102,963	128,273	136,349	152,172	140,879	156,469	177,566	134,200	124,809	128,358	132,655
3345	Navigational, measuring, electromedical, and control instruments manufacturing.....	67,817	72,069	74,134	79,158	80,455	79,074	78,229	78,539	85,981	88,195	92,346	94,558	97,626	104,235	102,022	99,658	100,480	108,221
3343, 3346	Other computer and electronic products manufacturing.....	12,819	13,500	14,155	14,764	15,653	16,643	17,554	19,757	21,920	19,010	18,183	19,060	17,445	17,303	16,626	16,361	16,084	19,313
336	Transportation equipment manufacturing.....	380,966	407,697	423,157	415,554	403,693	441,288	467,210	509,331	520,223	534,241	585,794	629,605	686,027	639,610	609,436	642,610	671,293	674,449
3361-63	Motor vehicles, bodies and trailers, and parts manufacturing.....	246,589	266,050	276,845	256,251	246,507	283,097	319,006	372,995	389,103	394,484	427,096	444,486	507,072	479,451	431,733	474,383	498,975	499,896
3364	Aerospace product and parts manufacturing.....	112,852	118,536	121,553	133,785	133,978	133,432	121,033	107,786	102,297	108,781	125,415	149,540	140,603	119,337	137,537	126,267	129,326	128,638
3365-66, 3369	Other transportation equipment manufacturing.....	21,525	23,111	24,759	25,517	23,209	24,759	27,171	28,550	28,822	30,977	33,282	35,580	38,352	40,821	40,166	41,960	42,992	45,915
5112	Software publishers.....	11,599	14,412	16,700	17,830	20,130	23,095	30,087	37,253	46,247	60,916	71,421	83,998	95,627	104,971	109,148	105,584	109,051	115,148
5415	Computer systems design and related services.....	25,026	29,373	33,841	36,997	40,512	44,141	50,341	58,169	66,235	79,970	102,494	127,841	152,176	174,382	180,556	173,910	171,470	170,165
5417	Scientific R&D services.....	20,208	23,857	26,878	30,039	30,497	32,085	34,542	35,897	37,628	43,471	51,005	56,254	61,304	69,121	77,218	82,414	84,852	91,048
	All other for-profit industries.....	6,486,445	7,030,118	7,496,276	7,909,776	7,973,016	8,379,091	8,846,860	9,440,576	10,051,268	10,691,806	11,298,722	11,883,994	12,628,448	13,677,311	13,820,088	14,014,070	14,718,208	16,000,442

NAICS North American Industry Classification System
R&D Research and development

NOTE: Private business gross output with R&D treated as investment and with the double-count of R&D software investment removed.

Table 7.1B. Real Private Business Gross Output by Industry With R&D Treated as Investment, 1987–2004

[Millions of chained (2000) dollars]

NAICS code	Industry	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
	All for-profit industries ..	9,870,215	10,261,755	10,662,309	11,021,299	11,175,759	11,447,519	11,756,673	12,099,310	12,576,275	12,973,773	13,330,865	14,121,908	14,899,482	15,646,195	15,596,299	15,658,485	16,015,805	16,692,217
325	Chemical manufacturing.....	345,495	362,709	372,896	377,784	375,159	382,581	385,459	397,311	400,903	406,010	432,942	438,782	442,748	447,113	434,809	453,173	462,817	477,445
3254	Pharmaceutical and medicine manufacturing	74,240	79,481	83,351	84,996	90,300	89,030	89,877	93,253	96,832	100,220	106,076	108,167	113,287	118,267	129,113	138,859	144,820	147,470
3251–53, 3255–56, 3259	Chemicals minus pharmaceutical and medicine manufacturing	269,221	281,553	288,299	291,664	284,907	293,153	295,201	303,723	304,049	306,032	327,040	330,815	329,537	328,845	305,540	313,991	317,522	329,540
334	Computer and electronic product manufacturing.....	86,198	94,882	97,804	104,885	108,357	120,915	132,493	155,726	202,679	249,321	305,636	355,291	428,275	533,687	513,068	455,854	477,286	507,221
3341	Computer and peripheral equipment manufacturing	7,833	9,435	9,622	10,469	10,746	13,608	16,437	20,565	28,291	40,597	55,678	74,014	92,600	106,179	109,300	105,479	116,343	124,818
3342	Communications equipment manufacturing	28,765	30,673	30,646	33,252	32,596	36,720	39,066	46,159	53,546	62,683	74,726	81,248	96,382	128,404	118,678	79,023	78,907	76,067
3344	Semiconductor and other electronic component manufacturing	10,915	12,128	13,379	14,688	16,480	19,419	22,441	28,941	44,812	60,167	78,746	94,247	126,498	177,566	165,809	157,822	171,585	185,745
3345	Navigational, measuring, electromedical, and control instruments manufacturing	80,173	82,910	82,471	85,548	84,522	81,609	79,693	79,326	85,864	87,828	91,394	93,511	97,325	104,235	102,290	98,923	99,039	105,968
3343, 3346	Other computer and electronic products manufacturing	10,954	11,627	12,078	12,603	13,292	14,297	15,445	17,766	20,062	17,718	17,318	18,351	17,117	17,303	17,025	17,306	17,444	21,633
336	Transportation equipment manufacturing.....	460,186	485,813	489,920	469,743	442,649	471,286	488,835	521,591	525,299	534,765	588,132	636,653	691,667	639,610	608,348	645,238	670,402	662,461
3361–63	Motor vehicles, bodies and trailers, and parts manufacturing	288,444	305,964	309,901	282,107	264,164	296,674	327,385	374,460	386,428	388,961	423,902	446,227	508,365	479,451	434,222	482,910	508,620	504,102
3364	Aerospace product and parts manufacturing	145,966	152,426	151,579	160,876	155,404	149,570	132,933	115,895	108,029	113,544	130,183	154,715	144,323	119,337	134,094	121,719	121,105	116,665
3365–66, 3369	Other transportation equipment manufacturing	28,754	30,406	31,304	31,071	27,264	28,310	30,557	31,610	30,575	32,259	34,255	36,425	39,116	40,821	39,699	41,179	41,707	42,904
5112	Software publishers	3,985	5,522	7,571	9,213	10,916	15,452	21,103	28,459	37,345	52,184	66,642	82,956	96,371	104,971	110,854	110,476	120,425	133,468
5415	Computer systems design and related services	33,393	37,717	42,861	45,548	48,305	51,884	57,974	65,815	72,206	85,198	105,604	134,273	156,953	174,382	179,263	174,795	174,974	176,464
5417	Scientific R&D services	22,918	26,124	28,687	31,479	31,078	32,396	34,619	35,730	37,240	43,533	51,468	57,327	62,237	69,121	76,883	80,889	82,648	86,142
	All other for-profit industries.....	9,154,056	9,474,638	9,856,524	10,218,218	10,397,602	10,587,891	10,836,113	11,061,331	11,417,092	11,677,382	11,816,140	12,437,093	13,027,457	13,677,311	13,671,777	13,728,742	14,020,861	14,643,737

NAICS North American Industry Classification System

R&D Research and development

Notes. Implemented using the aggregate output price index.

Private business gross output with R&D treated as investment and with the double-count of R&D software investment removed.

Table 7.2A. Private Business Gross Output by Industry Unadjusted for R&D as Investment, 1987–2004

[Millions of dollars]

NAICS code	Industry	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
	All for-profit industries ...	7,347,251	7,978,167	8,491,699	8,920,355	8,979,359	9,455,524	9,986,959	10,694,043	11,407,763	12,120,785	12,880,654	13,544,618	14,408,719	15,521,006	15,556,841	15,745,169	16,515,814	17,870,017
325	Chemical manufacturing.....	238,112	270,179	293,078	300,882	306,359	315,871	324,067	344,111	370,441	376,111	405,156	406,761	411,079	437,594	424,960	443,672	474,291	516,644
3254	Pharmaceutical and medicine manufacturing	38,267	43,897	49,928	55,143	62,974	65,849	68,792	73,548	78,637	83,866	89,862	100,891	107,355	114,309	127,082	138,559	149,033	155,409
3251–53, 3255–56, 3259	Chemicals minus pharmaceutical and medicine manufacturing	199,845	226,282	243,150	245,739	243,385	250,022	255,275	270,563	291,804	292,245	315,294	305,870	303,724	323,285	297,878	305,114	325,258	361,235
334	Computer and electronic product manufacturing.....	217,518	238,300	242,686	251,685	253,788	270,157	282,927	317,717	369,074	394,498	432,315	427,795	454,328	500,763	418,777	351,867	350,991	361,351
3341	Computer and peripheral equipment manufacturing	54,195	61,133	58,508	58,061	54,057	59,837	62,314	70,885	83,425	94,181	102,723	103,774	103,876	102,456	86,515	69,809	67,177	63,996
3342	Communications equipment manufacturing	35,514	37,693	37,565	40,659	39,880	44,819	47,664	55,735	61,990	71,357	84,208	83,104	96,529	119,129	100,175	64,744	62,200	59,431
3344	Semiconductor and other electronic component manufacturing	49,317	56,119	60,540	61,211	65,917	72,104	79,474	95,404	118,983	125,530	139,353	132,540	146,937	166,380	120,988	111,056	113,926	117,368
3345	Navigational, measuring, electromedical, and control instruments manufacturing	65,895	70,086	72,148	77,220	78,510	77,000	76,166	76,214	83,098	84,819	88,322	89,815	90,177	95,726	95,419	90,362	92,174	102,163
3343, 3346	Other computer and electronic products manufacturing	12,596	13,269	13,925	14,535	15,423	16,398	17,309	19,480	21,578	18,611	17,708	18,562	16,808	17,072	15,679	15,897	15,515	18,392
336	Transportation equipment manufacturing.....	368,615	395,068	410,157	403,180	390,880	426,884	452,996	494,486	504,436	517,374	569,410	614,130	668,676	623,644	594,189	627,104	652,573	656,071
3361–63	Motor vehicles, bodies and trailers, and parts manufacturing	241,054	260,088	270,223	249,926	239,870	276,320	311,129	364,186	379,229	383,804	416,859	434,731	494,413	466,809	420,242	463,549	487,026	489,243
3364	Aerospace product and parts manufacturing	106,389	112,213	115,502	128,035	128,106	126,187	115,041	102,078	96,699	102,921	119,590	144,134	136,401	116,547	134,470	122,337	123,400	121,800
3365–66, 3369	Other transportation equipment manufacturing	21,172	22,767	24,432	25,219	22,904	24,377	26,826	28,222	28,508	30,649	32,961	35,265	37,861	40,289	39,478	41,217	42,147	45,029
5112	Software publishers	10,952	13,488	15,563	17,400	19,245	22,194	28,651	35,797	44,452	56,522	66,220	77,031	87,967	96,562	99,762	97,876	99,647	107,177
5415	Computer systems design and related services.....	24,812	28,882	33,171	37,119	40,266	43,944	50,059	58,053	66,057	79,460	101,514	127,163	151,320	172,632	173,346	164,743	164,428	167,703
5417	Scientific R&D services	19,933	23,646	26,205	28,470	28,010	29,555	31,969	33,333	35,100	40,507	47,180	50,728	55,340	61,927	68,772	75,608	79,253	84,634
	All other for-profit industries.....	6,467,309	7,008,604	7,470,839	7,881,619	7,940,811	8,346,918	8,816,289	9,410,546	10,018,204	10,656,313	11,258,859	11,841,009	12,580,009	13,627,883	13,777,035	13,984,300	14,694,630	15,976,437

NAICS North American Industry Classification System
R&D Research and development

Table 7.2B. Real Private Business Gross Output by Industry Unadjusted for R&D as Investment, 1987–2004

[Millions of chained (2000) dollars]

NAICS code	Industry	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
	All for-profit industries ...	9,852,514	10,241,144	10,637,096	10,994,950	11,142,104	11,410,754	11,721,025	12,062,512	12,528,334	12,909,347	13,249,813	14,025,187	14,789,496	15,521,006	15,457,534	15,534,243	15,893,404	16,572,154
325	Chemical manufacturing	342,981	359,651	369,486	373,777	370,604	377,805	379,894	392,038	395,420	400,001	426,509	430,068	433,880	437,594	422,151	440,906	448,977	461,396
3254	Pharmaceutical and medicine manufacturing	74,068	79,046	82,758	84,342	89,315	87,561	87,790	91,054	94,560	98,130	103,201	105,549	109,636	114,309	124,189	132,470	136,508	136,821
3251–53, 3255–56, 3259	Chemicals minus pharmaceutical and medicine manufacturing	266,940	278,967	285,516	288,372	281,424	289,833	291,662	300,575	300,783	302,114	323,407	324,685	324,316	323,285	297,799	308,157	312,102	324,315
334	Computer and electronic product manufacturing	78,397	86,670	89,531	96,482	99,871	111,655	122,884	144,674	188,452	231,762	283,766	330,797	403,400	500,763	474,989	419,872	443,438	476,933
3341	Computer and peripheral equipment manufacturing	6,702	8,152	8,326	9,123	9,382	11,996	14,646	18,420	25,444	36,835	50,804	68,302	89,610	102,456	107,300	103,189	115,223	120,681
3342	Communications equipment manufacturing	28,013	29,915	29,914	32,771	32,145	36,250	38,614	45,643	52,796	61,684	73,389	75,658	91,798	119,129	104,456	70,461	71,264	72,017
3344	Semiconductor and other electronic component manufacturing	8,720	9,786	10,915	12,067	13,697	16,280	19,055	24,839	39,064	52,831	69,462	86,709	117,299	166,380	151,839	142,836	155,856	169,196
3345	Navigational, measuring, electromedical, and control instruments manufacturing	79,128	81,874	81,456	84,625	83,603	80,502	78,564	77,912	83,880	85,199	87,961	89,123	90,028	95,726	95,443	89,315	90,346	99,433
3343, 3346	Other computer and electronic products manufacturing	10,787	11,458	11,913	12,440	13,132	14,125	15,276	17,575	19,812	17,389	16,897	17,883	16,493	17,072	16,050	16,826	16,847	20,656
336	Transportation equipment manufacturing	450,710	476,569	480,475	460,768	433,057	460,125	477,981	510,269	512,596	520,163	573,412	622,063	674,650	623,644	592,614	629,030	650,836	643,253
3361–63	Motor vehicles, bodies and trailers, and parts manufacturing	284,612	301,909	305,215	277,497	259,147	291,703	321,457	367,839	378,545	379,762	414,754	437,051	495,942	466,809	422,375	471,566	496,050	492,853
3364	Aerospace product and parts manufacturing	140,790	147,730	147,316	157,179	151,533	143,938	128,408	111,387	103,356	108,331	124,822	149,559	140,200	116,547	130,914	117,685	115,145	109,889
3365–66, 3369	Other transportation equipment manufacturing	28,455	30,137	31,068	30,870	27,039	27,999	30,295	31,369	30,335	31,990	33,981	36,140	38,636	40,289	38,992	40,408	40,829	41,985
5112	Software publishers	3,622	5,014	6,945	8,905	10,357	14,893	20,180	27,571	36,172	48,748	62,316	76,635	89,024	96,562	101,017	102,243	110,241	124,971
5415	Computer systems design and related services	33,361	37,361	42,352	46,050	48,379	52,084	58,101	66,203	72,497	85,116	105,008	133,944	156,304	172,632	171,780	165,254	167,463	173,658
5417	Scientific R&D services	31,717	35,740	38,170	40,002	37,639	38,571	40,909	41,808	42,140	47,148	53,304	55,531	58,130	61,927	66,162	70,193	71,367	72,234
	All other for-profit industries	9,145,324	9,463,718	9,841,524	10,200,270	10,375,184	10,565,602	10,816,076	11,042,122	11,393,739	11,649,523	11,781,681	12,397,143	12,980,130	13,627,883	13,627,039	13,696,620	13,994,390	14,616,682

NAICS North American Industry Classification System
R&D Research and development

Table 7.3A. Private Business Value Added by Industry With R&D Treated as Investment, 1987–2004

[Millions of dollars]

NAICS code	Industry	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
	All for-profit industries	3,873,074	4,177,849	4,503,772	4,759,012	4,907,014	5,216,006	5,513,600	5,910,107	6,222,274	6,616,445	7,015,223	7,405,170	7,870,164	8,346,448	8,560,636	8,772,209	9,153,452	9,799,940
325	Chemical manufacturing	87,579	98,610	109,078	117,498	122,273	127,783	133,589	148,196	158,032	160,743	172,384	177,521	183,945	188,057	189,504	208,400	220,774	247,011
3254	Pharmaceutical and medicine manufacturing	20,690	23,837	27,347	30,901	35,379	37,839	40,599	45,791	49,371	51,328	56,302	59,172	65,611	69,228	73,936	85,892	98,080	112,204
3251–53, 3255–56, 3259	Chemicals minus pharmaceutical and medicine manufacturing	66,889	74,773	81,731	86,597	86,894	89,944	92,990	102,405	108,660	109,415	116,082	118,349	118,334	118,828	115,568	122,508	122,693	134,807
334	Computer and electronic product manufacturing	97,172	106,141	108,866	111,682	115,319	119,208	122,216	136,345	152,443	164,175	183,883	197,230	193,137	225,681	180,851	164,682	162,844	165,807
3341	Computer and peripheral equipment manufacturing	14,230	15,808	14,584	14,408	13,906	15,375	15,741	17,216	19,331	22,781	25,409	27,623	24,059	27,774	21,586	19,166	17,794	18,660
3342	Communications equipment manufacturing	14,526	15,747	15,978	16,783	16,739	18,462	19,291	22,463	23,714	27,243	32,690	40,417	37,271	47,260	41,731	28,181	25,819	20,800
3344	Semiconductor and other electronic component manufacturing	27,416	31,378	34,321	34,564	37,529	39,815	42,482	51,920	62,385	66,788	76,109	74,342	72,850	81,925	57,302	56,301	57,517	60,068
3345	Navigational, measuring, electromedical, and control instruments manufacturing	36,809	38,751	39,501	41,267	42,199	40,469	39,354	38,694	40,711	41,569	43,899	48,335	52,941	62,244	54,573	55,635	55,913	59,178
3343, 3346	Other computer and electronic products manufacturing	4,192	4,458	4,482	4,659	4,946	5,087	5,348	6,051	6,303	5,793	5,777	6,514	6,016	6,478	5,659	5,379	5,800	7,102
336	Transportation equipment manufacturing	138,977	136,556	136,768	132,019	141,581	150,321	160,725	169,891	165,487	174,525	179,718	193,286	204,050	206,373	192,309	210,285	212,779	201,942
3361–63	Motor vehicles, bodies and trailers, and parts manufacturing	71,379	74,563	72,586	63,502	66,169	81,657	95,797	115,668	112,892	114,813	117,914	123,057	134,010	137,442	118,436	134,875	142,140	126,303
3364	Aerospace product and parts manufacturing	57,042	52,003	53,503	57,586	64,479	57,978	53,293	43,246	41,635	47,082	49,402	55,805	55,081	52,957	58,201	57,456	55,279	58,948
3365–66, 3369	Other transportation equipment manufacturing	10,556	9,991	10,679	10,931	10,933	10,686	11,634	10,977	10,960	12,629	12,402	14,423	14,960	15,974	15,671	17,934	15,360	16,691
5112	Software publishers	6,404	7,845	9,377	9,466	11,040	12,888	16,448	20,613	23,910	33,328	38,618	43,825	52,858	53,789	57,616	55,959	59,252	62,048
5415	Computer systems design and related services	22,264	26,007	29,643	32,170	34,393	38,129	42,478	47,876	52,567	62,762	79,971	93,890	109,121	128,171	135,298	137,838	132,661	134,658
5417	Scientific R&D services	15,287	17,693	19,793	22,878	23,346	25,003	26,931	27,378	28,093	31,547	36,362	41,073	44,562	50,478	53,711	54,208	56,418	60,041
	All other for-profit industries ...	3,505,390	3,784,996	4,090,247	4,333,299	4,459,062	4,742,673	5,011,214	5,359,809	5,641,742	5,989,366	6,324,286	6,658,345	7,082,490	7,493,900	7,751,347	7,940,878	8,308,724	8,928,433

NAICS North American Industry Classification System

R&D Research and development

NOTE: Private business value added with R&D treated as investment and with the double-count of R&D software investment removed.

Table 7.3B. Real Private Business Value Added by Industry With R&D Treated as Investment, 1987–2004

[Millions of chained (2000) dollars]

NAICS code	Industry	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
	All for-profit industries.....	5,102,061	5,306,577	5,528,725	5,766,691	5,945,832	6,123,892	6,344,725	6,561,804	6,813,933	7,049,207	7,234,054	7,610,095	8,003,076	8,346,448	8,453,386	8,550,617	8,774,237	9,160,838
325	Chemical manufacturing	127,514	126,685	130,971	142,451	141,263	145,277	148,702	159,741	157,940	162,989	172,304	173,359	183,804	188,057	185,617	205,229	211,308	231,979
3254	Pharmaceutical and medicine manufacturing	40,986	43,562	44,962	46,004	47,554	46,803	48,096	52,960	56,830	58,104	63,017	59,655	65,688	69,228	72,878	82,899	90,038	100,387
3251-53, 3255-56, 3259	Chemicals minus pharmaceutical and medicine manufacturing	85,689	83,338	86,204	95,780	93,489	97,913	100,052	106,310	101,291	104,984	109,634	113,644	118,114	118,828	112,762	122,328	120,943	131,090
334	Computer and electronic product manufacturing	17,938	20,738	21,884	23,438	24,801	27,262	30,500	37,159	51,355	67,258	88,095	122,985	153,644	225,681	226,795	226,565	249,520	282,401
3341	Computer and peripheral equipment manufacturing	43	62	69	88	110	174	292	420	727	1,649	3,482	8,056	15,682	27,774	39,823	62,416	86,518	116,719
3342	Communications equipment manufacturing	13,758	16,098	16,128	16,437	15,445	16,557	17,073	20,300	22,486	24,822	28,494	35,667	34,612	47,260	43,528	32,226	32,915	31,384
3344	Semiconductor and other electronic component manufacturing	1,348	1,581	1,859	2,158	2,536	3,067	3,643	5,187	9,410	14,975	22,266	33,896	47,022	81,925	88,604	91,057	105,210	124,794
3345	Navigational, measuring, electromedical, and control instruments manufacturing	66,171	68,589	66,450	64,767	62,141	56,642	53,416	51,477	51,588	47,999	46,899	49,000	53,122	62,244	53,754	53,589	53,298	56,833
3343, 3346	Other computer and electronic products manufacturing	8,916	10,615	11,008	10,020	10,554	10,062	10,945	12,560	12,576	7,038	5,265	5,858	5,610	6,478	5,957	6,152	7,011	9,308
336	Transportation equipment manufacturing	179,336	182,826	178,498	167,547	168,928	169,159	174,399	179,763	177,375	180,669	186,101	199,702	205,627	206,373	189,356	211,525	214,823	209,114
3361-63	Motor vehicles, bodies and trailers, and parts manufacturing	86,518	95,058	90,798	78,782	76,327	88,172	98,819	115,943	116,409	114,441	118,833	125,142	132,720	137,442	119,066	141,956	152,701	142,769
3364	Aerospace product and parts manufacturing	81,943	76,835	76,618	78,274	83,188	71,041	63,660	50,519	48,129	52,763	54,376	60,004	57,776	52,957	54,978	53,126	49,151	50,917
3365-66, 3369	Other transportation equipment manufacturing	15,702	14,683	15,041	14,975	14,257	13,281	14,207	13,343	12,585	13,694	13,069	14,886	15,251	15,974	15,105	17,055	14,564	15,933
5112	Software publishers	966	1,476	2,430	3,134	4,005	6,768	9,310	13,526	17,335	26,431	35,355	43,498	53,712	53,789	58,660	59,821	69,341	79,662
5415	Computer systems design and related services	32,140	36,079	40,573	42,703	44,060	48,071	52,262	57,686	60,429	69,559	84,494	100,938	113,742	128,171	133,652	138,380	136,031	141,524
5417	Scientific R&D services	16,660	18,633	20,351	23,168	22,954	24,420	26,184	26,519	27,281	31,250	36,561	41,819	45,190	50,478	53,521	53,137	55,041	57,005
	All other for-profit industries	4,905,166	5,088,434	5,303,305	5,534,665	5,711,128	5,866,591	6,060,757	6,226,194	6,428,471	6,587,410	6,678,904	6,948,453	7,256,168	7,493,900	7,605,546	7,655,725	7,843,810	8,173,866

NAICS North American Industry Classification System

R&D Research and development

NOTES. Implemented using the aggregate output price index. Private business value added with R&D treated as investment and with the double-count of R&D software investment removed.

Table 7.4A. Private Business Value Added by Industry Unadjusted for R&D as Investment, 1987-2004

[Millions of dollars]

NAICS code	Industry	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
	All for-profit industries	3,807,477	4,106,418	4,425,072	4,676,733	4,815,975	5,121,262	5,418,437	5,812,421	6,113,150	6,494,969	6,880,515	7,259,732	7,711,009	8,167,966	8,380,387	8,609,304	8,988,042	9,633,671
325	Chemical manufacturing ...	76,982	86,579	96,006	103,138	106,549	111,238	115,470	129,858	138,541	140,654	150,846	153,362	157,142	157,057	174,363	174,363	179,485	198,440
3254	Pharmaceutical and medicine manufacturing	15,133	17,407	20,260	23,223	26,603	28,073	29,536	34,076	36,558	38,546	41,512	44,824	47,224	47,138	53,183	60,627	65,113	71,712
3251-53, 3255-56, 3259	Chemicals minus pharmaceutical and medicine manufacturing	61,849	69,171	75,746	79,915	79,946	83,165	85,933	95,782	101,983	102,108	109,334	108,538	109,918	109,919	104,043	113,736	114,372	126,728
334	Computer and electronic product manufacturing	83,239	91,733	94,409	97,461	100,991	103,945	107,029	119,235	131,185	139,341	154,403	165,673	162,777	185,563	136,931	124,152	124,001	129,530
3341	Computer and peripheral equipment manufacturing	10,627	12,080	10,836	10,776	10,250	11,475	11,866	12,832	13,895	16,427	17,851	19,630	20,461	23,366	19,088	16,422	15,787	14,645
3342	Communications equipment manufacturing	13,279	14,467	14,714	15,806	15,780	17,451	18,309	21,347	22,221	25,446	30,490	32,560	30,899	34,938	24,111	17,316	15,923	14,540
3344	Semiconductor and other electronic component manufacturing	20,901	24,638	27,549	27,616	30,508	32,326	35,011	43,515	52,041	54,751	61,868	64,987	62,109	69,227	42,531	40,935	41,306	42,834
3345	Navigational, measuring, electromedical, and control instruments manufacturing	34,490	36,349	37,086	38,862	39,766	37,884	36,773	35,804	37,113	37,375	38,954	42,545	44,014	51,833	46,604	44,635	45,845	51,462
3343, 3346	Other computer and electronic products manufacturing	3,942	4,199	4,223	4,401	4,686	4,809	5,070	5,738	5,916	5,342	5,240	5,950	5,294	6,199	4,597	4,844	5,140	6,050
336	Transportation equipment manufacturing	123,137	120,293	119,931	115,850	124,817	131,705	142,089	150,254	144,211	151,727	157,513	172,170	179,649	182,544	170,757	188,524	186,444	175,498
3361-63	Motor vehicles, bodies and trailers, and parts manufacturing	63,493	66,090	63,208	54,458	56,671	71,964	84,607	103,150	98,686	99,422	103,095	108,827	115,397	118,105	101,582	118,882	124,093	109,830
3364	Aerospace product and parts manufacturing	49,485	44,600	46,414	50,801	57,560	49,488	46,240	36,502	34,926	40,053	42,388	49,286	49,855	49,101	54,305	52,551	47,955	50,015
3365-66, 3369	Other transportation equipment manufacturing	10,159	9,603	10,310	10,591	10,586	10,253	11,243	10,603	10,598	12,251	12,030	14,057	14,398	15,338	14,870	17,091	14,396	15,654
5112	Software publishers	5,690	6,845	8,162	8,944	10,049	11,878	14,894	19,032	21,953	28,732	33,191	36,597	44,868	44,938	47,885	47,893	49,385	53,555
5415	Computer systems design and related services	21,984	25,424	28,865	32,147	33,960	37,741	41,988	47,553	52,143	61,960	78,642	92,862	107,792	125,744	127,064	127,323	124,333	131,108
5417	Scientific R&D services	14,784	17,225	18,844	20,995	20,524	22,125	23,991	24,426	25,100	28,063	31,957	34,944	37,853	42,296	44,484	46,518	49,784	52,467
	All other for-profit industries	3,481,661	3,758,319	4,058,854	4,298,198	4,419,083	4,702,632	4,972,975	5,322,062	5,600,018	5,944,491	6,273,963	6,604,124	7,020,927	7,429,824	7,696,040	7,900,531	8,274,609	8,893,073

NAICS North American Industry Classification System
R&D Research and development

Table 7.4B. Real Private Business Value Added by Industry Unadjusted for R&D as Investment, 1987–2004
 [Millions of chained (2000) dollars]

NAICS code	Industry	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
	All for-profit industries	5,073,423	5,273,657	5,489,972	5,725,268	5,896,250	6,070,285	6,291,826	6,506,958	6,743,524	6,958,491	7,121,958	7,477,801	7,849,505	8,167,966	8,264,976	8,375,700	8,593,572	8,976,585
325	Chemical manufacturing	122,073	119,324	122,726	133,271	130,512	133,611	135,289	146,520	142,833	146,349	153,356	150,539	157,519	157,057	152,407	169,723	168,764	182,384
3254	Pharmaceutical and medicine manufacturing	40,947	42,439	42,968	43,089	43,251	40,717	40,348	44,976	47,485	48,107	50,200	46,239	47,665	47,138	51,421	56,646	56,709	60,245
3251–53, 3255–56, 3259	Chemicals minus pharmaceutical and medicine manufacturing	81,965	78,959	81,541	90,554	88,000	92,655	94,511	101,329	95,994	98,773	103,666	104,325	109,856	109,919	100,971	113,082	112,094	122,404
334	Computer and electronic product manufacturing...	11,953	14,110	15,037	16,307	17,407	19,203	21,836	26,883	37,569	49,701	65,686	95,381	124,188	185,563	180,690	184,527	211,506	252,871
3341	Computer and peripheral equipment manufacturing	2	4	4	6	8	15	32	50	98	319	911	3,416	12,283	23,366	39,573	66,021	99,791	125,204
3342	Communications equipment manufacturing	12,639	14,990	15,060	15,659	14,686	15,760	16,299	19,423	21,221	23,180	26,373	28,292	28,315	34,938	25,253	21,029	22,843	26,638
3344	Semiconductor and other electronic component manufacturing	575	704	865	1,035	1,265	1,572	1,940	2,895	5,638	9,493	14,715	26,083	37,053	69,227	72,923	74,302	88,614	109,730
3345	Navigational, measuring, electromedical, and control instruments manufacturing	67,432	69,977	67,688	65,876	63,045	56,872	53,406	50,870	49,870	45,040	42,763	43,682	44,370	51,833	45,503	42,317	42,840	48,508
3343, 3346	Other computer and electronic products manufacturing	9,266	11,143	11,589	10,486	11,082	10,493	11,467	13,167	12,993	6,743	4,785	5,324	4,911	6,199	4,853	5,626	6,349	8,217
336	Transportation equipment manufacturing	169,620	173,143	167,971	157,125	158,072	155,878	161,279	165,654	160,712	161,199	166,243	179,928	181,677	182,544	167,120	188,734	187,316	181,524
3361–63	Motor vehicles, bodies and trailers, and parts manufacturing	81,810	90,334	84,690	72,254	69,203	81,349	90,774	107,082	105,396	101,324	105,655	111,829	114,439	118,105	101,694	125,255	133,735	125,467
3364	Aerospace product and parts manufacturing	77,499	72,356	72,762	75,015	80,262	64,968	58,904	45,263	42,542	46,575	47,865	53,727	52,629	49,101	50,944	48,122	41,990	42,344
3365–66, 3369	Other transportation equipment manufacturing	15,434	14,418	14,818	14,791	14,055	12,949	13,937	13,080	12,313	13,392	12,749	14,558	14,702	15,338	14,284	16,177	13,579	14,871
5112	Software publishers	713	1,105	1,918	2,759	3,424	6,095	8,283	12,444	15,907	22,816	30,828	36,921	46,073	44,938	48,461	51,222	58,645	70,902
5415	Computer systems design and related services	32,163	35,730	40,054	43,237	44,074	48,235	52,329	58,036	60,605	69,283	83,620	100,309	112,636	125,744	125,135	127,457	127,184	137,574
5417	Scientific R&D services	26,048	28,674	30,150	32,286	29,942	31,210	33,151	33,044	32,309	34,685	37,968	39,549	40,371	42,296	42,069	41,804	42,946	42,362
	All other for-profit industries	4,893,643	5,074,229	5,284,263	5,511,692	5,683,172	5,838,835	6,035,730	6,202,099	6,399,016	6,552,196	6,635,410	6,897,997	7,195,994	7,429,824	7,548,079	7,612,206	7,805,769	8,134,420

NAICS North American Industry Classification System
 R&D Research and development

Table 8. Gross Output, Intermediate Inputs, and Value Added for Pharmaceutical and Medicine Manufacturing Unadjusted and Adjusted for R&D as Investment, 1987 and 2004

Line	Steps	Description	1987	2004
			(Millions of dollars)	
1	Industry gross output before adjustments	Tabulation of BEA GDP-by-industry data, including unpublished detail¹	38,267	155,409
2	Plus: Own-account R&D investment, which is calculated as		1,192	10,891
3	National Science Foundation (NSF) R&D expenditures from the Survey of Industrial R&D (SIRD) ²	Funds for industrial R&D performed in the United States. ³ The value for 1987 is estimated based on 1987 SIRD data for the SIC-based drugs and medicines industry using standard BEA methods for (a) converting SIC data to NAICS and (b) estimating suppressed values.	3,603	31,477
4	Plus: Adjustments to account for the full cost of production and to create a consistent time series	(1) A capital consumption adjustment is made to convert business depreciation to the national accounting concept—consumption of fixed capital (CFC). (2) Expenditures for Federally funded research and development centers (FFRDCs) are removed for years when they are included in the industry performance total.	66	454
5	Less: The cost for R&D performed in company headquarters (NAICS 551), R&D services subsidiary establishments, and auxiliary R&D services establishments (both in NAICS 5417)	This estimate is based on R&D payroll in company headquarters (NAICS 551) and R&D services subsidiary establishments, and auxiliary R&D services establishments (both in NAICS 5417), using unpublished data from the Census Bureau and SIRD.	2,122	18,471
6	Less: The cost of R&D funded by the Federal Government	Federally funded industry performed R&D adjusted for CFC. ³	(D)	(D)
7	Less: The cost of R&D funded by state and local (S&L) governments	Total funding estimated in the NIPA-based R&D satellite account, less an estimate of the gap between funder outlays and costs. ⁴ Total costs distributed across industries using the distribution of Federally funded R&D, excluding the aerospace product and parts manufacturing industry (NAICS 3364) and the navigational, measuring, electromedical, and control instruments manufacturing industry (NAICS 3345). These types of R&D are assumed to be primarily defense related. Assumed to be zero.	(D)	(D)
8	Less: The cost of R&D funded by nonprofit institutions serving households		0	0
9	Less: The cost of (1) R&D sold to other domestic businesses and (2) exported R&D	For both domestic purchases and exports, costs are calculated for this step using an estimate of the gap between funder outlays and costs. ⁴ Total R&D sold to other domestic businesses is estimated with industry purchases from other domestic for-profit companies. The industry is assumed to sell R&D in proportion to their performance. ⁵ Cost of exports are based on BEA international services trade data for research, development, and testing services. ⁵	(D)	(D)
10	Plus: R&D expenses to create software that are not accounted for in NSF data	Special tabulation of BEA own-account software R&D. These expenses are added for time series consistency. They are removed in the step below in the double-count adjustment.	12	No adjustment necessary
11	Less: The double-counting of own-account R&D software investment	For 1987, a special tabulation of BEA own-account software data was performed. For 2004, values come from SIRD.⁷	12	106
12	Equals: Gross output adjusted for own-account R&D as investment		39,447	166,194
13	Intermediate inputs before capitalization	Tabulation of GDP-by-industry data, including unpublished detail.¹	23,134	83,697
14	Less: Total purchased R&D, calculated as the sum of		4,377	29,706
15	Cost of R&D performed in a company headquarters (NAICS 551) or R&D services auxiliary (NAICS 5417) and transferred for use in pharmaceutical and medicine manufacturing establishments (line 5)	The costs incurred in NAICS 5417 and NAICS 551 establishments, described in line 5, are transferred as the sum of production costs. The auxiliary establishment component of NAICS 5417 output is estimated with the ratio of auxiliary output to total private output of NAICS 5417 data from the Economic Census.	1,203	8,447
16	Plus: R&D purchased from a R&D services (NAICS 5417) domestic subsidiary for use in pharmaceutical and medicine manufacturing establishments (line 5)	These costs are adjusted with an estimate of the gap between receipts and costs to represent the purchase value of R&D output. ⁴	1,189	11,743
17	Plus: Purchases of nonscience and engineering R&D from for-profit R&D services establishments (NAICS 54172)	Total purchases for all industries are based on BEA's annual input-output values. Capitalized R&D should include social science R&D, and this measure provides a partial estimate. This industry share is proxied with the distribution of business purchases of R&D from non-profits and universities and colleges from SIRD. ⁵	663	2,251
18	Plus: Industry-funded R&D performed by academic institutions	Total for all industries from unpublished detail from the NIPA-based R&D satellite account estimate. Industry share comes from SIRD data on company-funded R&D performed by universities and colleges. ⁵	443	1,215
19	Plus: Industry-funded R&D performed by nonprofit institutions serving households	Total for all industries from unpublished detail from the NIPA-based R&D satellite account estimate. Industry share comes from SIRD data on company-funded R&D performed by nonprofit organizations (other than universities and colleges). ⁵	144	360
20	Plus: Industry-funded R&D performed by FFRDCs	Total for all industries from unpublished detail from the NIPA-based R&D satellite account estimate. Industry share assumes that the same industries purchase R&D from FFRDCs as perform R&D for the Federal government.	(D)	(D)
21	Plus: Industry-funded R&D performed by S&L governments	Total for all industries from unpublished detail from the NIPA-based R&D satellite account estimate. Industry share is proxied with SIRD data on company-funded R&D performed by academic and non-profit organizations. ⁵	(D)	(D)
22	Plus: (1) Domestic purchases of R&D from other for-profit companies and (2) imports of R&D	Industry purchases are estimated based on SIRD data on business purchases of R&D from other domestic for-profit companies. ⁵ Industry imports are estimated based on BEA data on international trade in R&D services. ⁶	(D)	(D)
23	Intermediate inputs including R&D adjustments (line 13 less line 14)⁸		18,757	53,990
24	Value added before adjustments (line 1 less line 13)	Tabulation of BEA GDP-by-industry data, including unpublished detail.¹	15,133	71,712
25	Plus: Total R&D investment less the double-counting of own-account R&D software investment (line 2 plus line 14 less line 11)	For 1987, own-account R&D software investment values are BEA estimates. For 2004, values come from SIRD. ⁷	5,557	40,491
26	Value added including R&D adjustments (line 12 less line 23)		20,690	112,204
27	Addendum: Total R&D investment including software R&D (line 2 plus line 14)		5,569	40,597

GDP Gross domestic product

NIPAs National income and product accounts

NAICS North American Industry Classification System

R&D Research and development

SIC Standard Industrial Classification

D Suppressed to avoid disclosure of data from individual companies.

1. BEA GDP-by-industry data are available at <www.bea.gov/industry/gdpbyind_data.htm>.

2. NSF SIRD data are available at <www.nsf.gov/statistics/industry>. Historical data are provided in the Industrial Research and Development Information System at <www.nsf.gov/statistics/irris>.

3. 2004 SIRD, table 1.

4. Estimated with the ratio of net operating surplus to gross output for miscellaneous professional, scientific, and technical services (NAICS 5412OP) from BEA's GDP-by-industry data, various years.

5. 2004 SIRD, table 12.

6. BEA international services trade data are available at <www.bea.gov/international/intlserv.htm>. Industry detail is based on a tabulation of unpublished data for the years 1997–2004 for both affiliated and unaffiliated trade.

7. 2004 SIRD, table 7.

8. Off by one because of rounding.