

Table 1.1 Real Gross Domestic Product (GDP) and Real GDP with R&D Adjustment, 1959–2002

	1959	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969
	Millions of chained (2000) dollars										
GDP	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 in scenario A.....	2,502,659	2,565,662	2,625,397	2,783,699	2,904,051	3,075,350	3,273,862	3,488,592	3,581,411	3,757,836	3,878,390
GDP in scenario B.....	2,420,604	2,483,638	2,542,362	2,697,952	2,820,469	2,989,212	3,185,433	3,399,490	3,490,303	3,665,215	3,786,821
GDP in scenario C.....	2,445,880	2,508,464	2,566,699	2,722,588	2,845,305	3,014,490	3,211,437	3,425,506	3,516,609	3,692,356	3,813,249
GDP in scenario D.....	2,433,272	2,495,636	2,553,750	2,709,405	2,831,435	2,999,995	3,196,455	3,410,207	3,501,384	3,677,109	3,798,474
	Percent change in GDP										
Scenario A.....	2.5	2.6	2.6	2.5	2.5	2.6	2.6	2.6	2.8	2.9	3.0
Scenario B.....	-0.8	-0.7	-0.7	-0.6	-0.5	-0.3	-0.2	0.0	0.2	0.3	0.6
Scenario C.....	0.2	0.3	0.3	0.3	0.4	0.5	0.6	0.8	0.9	1.1	1.3
Scenario D.....	-0.3	-0.2	-0.2	-0.2	-0.1	0.0	0.2	0.3	0.5	0.7	0.9
	Millions of chained (2000) dollars										
GDP	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 in scenario A.....	3,884,122	4,010,468	4,221,217	4,459,915	4,437,032	4,426,896	4,658,709	4,870,337	5,138,778	5,301,841	5,293,226
GDP in scenario B.....	3,794,770	3,917,134	4,122,556	4,360,936	4,343,362	4,334,079	4,562,387	4,773,152	5,041,454	5,208,956	5,204,844
GDP in scenario C.....	3,821,081	3,946,060	4,153,281	4,392,222	4,372,838	4,364,135	4,594,468	4,805,887	5,074,523	5,241,918	5,237,989
GDP in scenario D.....	3,806,630	3,929,155	4,134,402	4,372,442	4,353,132	4,344,582	4,573,782	4,784,281	5,051,619	5,218,489	5,214,164
	Percent change in GDP										
Scenario A.....	3.0	2.9	2.8	2.7	2.7	2.7	2.6	2.5	2.5	2.5	2.5
Scenario B.....	0.6	0.5	0.4	0.4	0.6	0.5	0.5	0.5	0.5	0.7	0.8
Scenario C.....	1.3	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.3	1.5
Scenario D.....	0.9	0.8	0.7	0.7	0.8	0.8	0.7	0.7	0.7	0.9	1.0
	Millions of chained (2000) dollars										
GDP	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
GDP in scenario A.....	5,427,980	5,331,796	5,574,518	5,973,632	6,221,370	6,432,311	6,643,641	6,913,975	7,154,928	7,294,017	7,280,807
GDP in scenario B.....	5,342,129	5,247,277	5,488,282	5,886,756	6,132,559	6,341,916	6,563,368	6,840,134	7,086,997	7,231,365	7,232,449
GDP in scenario C.....	5,376,220	5,280,726	5,521,588	5,919,172	6,161,986	6,367,610	6,586,516	6,861,026	7,106,571	7,250,125	7,250,352
GDP in scenario D.....	5,351,827	5,256,969	5,497,665	5,895,716	6,141,307	6,350,228	6,571,094	6,847,327	7,094,000	7,238,144	7,238,603
	Percent change in GDP										
Scenario A.....	2.6	2.7	2.8	2.8	2.8	2.7	2.6	2.5	2.5	2.6	2.7
Scenario B.....	1.0	1.1	1.2	1.3	1.3	1.3	1.4	1.4	1.5	1.7	1.9
Scenario C.....	1.6	1.8	1.8	1.8	1.8	1.7	1.7	1.8	1.8	1.9	2.1
Scenario D.....	1.1	1.3	1.4	1.4	1.4	1.4	1.5	1.6	1.6	1.8	1.9
	Millions of chained (2000) dollars										
GDP	7,336,614	7,532,658	7,835,512	8,031,655	8,328,913	8,703,528	9,066,854	9,470,332	9,816,973	9,890,694	10,048,846
GDP in scenario A.....	7,526,957	7,719,384	8,023,550	8,234,469	8,542,059	8,928,417	9,303,370	9,721,418	10,082,823	10,151,897	10,295,813
GDP in scenario B.....	7,470,918	7,666,435	7,975,238	8,189,862	8,504,107	8,896,708	9,282,527	9,716,479	10,098,968	10,181,259	10,339,339
GDP in scenario C.....	7,487,939	7,682,131	7,989,464	8,201,751	8,513,219	8,901,578	9,285,008	9,716,956	10,097,907	10,182,661	10,342,505
GDP in scenario D.....	7,476,063	7,670,520	7,978,141	8,191,480	8,505,043	8,896,713	9,284,297	9,717,955	10,098,145	10,183,341	10,341,526
	Percent change in GDP										
Scenario A.....	2.6	2.5	2.4	2.5	2.6	2.6	2.6	2.7	2.7	2.6	2.5
Scenario B.....	1.8	1.8	1.8	2.0	2.1	2.2	2.4	2.6	2.9	2.9	2.9
Scenario C.....	2.1	2.0	2.0	2.1	2.2	2.3	2.4	2.6	2.9	3.0	2.9
Scenario D.....	1.9	1.8	1.8	2.0	2.1	2.2	2.4	2.6	2.9	3.0	2.9

Notes. Percentage change is calculated from GDP for each year.
Adjusted GDP incorporates the impact of treating R&D as investment.
Scenario A uses an input price index.
Scenario B uses a multifactor productivity-adjusted price index.
Scenario C uses a high-productivity service industries price index.
Scenario D uses a top four R&D performers price index.

Table 1.2 Current-Dollar Gross Domestic Product (GDP) and GDP with R&D Adjustments, 1959–2002

	1959	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969
	Millions of dollars										
GDP	506,585	526,398	544,716	585,627	617,740	663,615	719,119	787,788	832,596	909,989	984,602
GDP in scenario A	515,740	536,110	554,792	596,139	629,137	676,479	733,416	804,140	851,070	931,319	1,008,944
GDP in scenario B	516,850	537,449	556,355	598,014	631,700	679,588	737,175	808,828	855,833	936,150	1,013,644
GDP in scenario C	517,230	537,756	556,726	598,258	631,904	679,700	737,228	808,430	855,405	935,697	1,012,453
GDP in scenario D	517,380	537,950	556,757	598,506	632,002	679,755	737,346	808,735	855,877	936,495	1,013,865
	Percent change in GDP										
Scenario A	1.8	1.8	1.8	1.8	1.8	1.9	2.0	2.1	2.2	2.3	2.5
Scenario B	2.0	2.1	2.1	2.1	2.3	2.4	2.5	2.7	2.8	2.9	2.9
Scenario C	2.1	2.2	2.2	2.2	2.3	2.4	2.5	2.6	2.7	2.8	2.8
Scenario D	2.1	2.2	2.2	2.2	2.3	2.4	2.5	2.7	2.8	2.9	3.0

	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980
	Millions of dollars										
GDP	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 in scenario A	1,064,390	1,154,342	1,267,947	1,414,822	1,534,975	1,676,081	1,866,147	2,075,218	2,343,566	2,618,688	2,852,494
GDP in scenario B	1,068,569	1,158,291	1,271,507	1,418,686	1,539,570	1,680,325	1,870,680	2,080,265	2,349,551	2,625,568	2,859,291
GDP in scenario C	1,067,149	1,158,009	1,271,790	1,418,623	1,538,163	1,679,626	1,871,028	2,080,758	2,349,029	2,622,846	2,855,987
GDP in scenario D	1,069,084	1,159,122	1,272,341	1,419,305	1,538,923	1,680,552	1,871,990	2,081,814	2,350,053	2,624,773	2,857,476
	Percent change in GDP										
Scenario A	2.5	2.4	2.4	2.3	2.3	2.3	2.2	2.2	2.1	2.2	2.3
Scenario B	2.9	2.8	2.7	2.6	2.6	2.6	2.5	2.4	2.4	2.4	2.5
Scenario C	2.8	2.7	2.7	2.6	2.5	2.5	2.5	2.5	2.4	2.3	2.4
Scenario D	2.9	2.8	2.7	2.6	2.6	2.6	2.6	2.5	2.4	2.4	2.4

	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991
	Millions of dollars										
GDP	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
GDP in scenario A	3,200,388	3,335,419	3,625,340	4,031,912	4,327,600	4,573,170	4,854,806	5,226,089	5,613,704	5,943,750	6,148,830
GDP in scenario B	3,208,403	3,342,222	3,632,466	4,040,445	4,337,161	4,583,164	4,866,150	5,240,357	5,631,357	5,963,292	6,169,819
GDP in scenario C	3,205,224	3,341,779	3,633,847	4,043,769	4,343,431	4,590,982	4,871,027	5,244,029	5,631,720	5,961,603	6,167,636
GDP in scenario D	3,206,014	3,342,096	3,632,755	4,040,694	4,336,794	4,582,991	4,866,039	5,239,936	5,629,729	5,961,864	6,169,705
	Percent change in GDP										
Scenario A	2.3	2.5	2.5	2.5	2.5	2.5	2.4	2.4	2.4	2.4	2.6
Scenario B	2.6	2.7	2.7	2.7	2.8	2.7	2.7	2.7	2.7	2.8	2.9
Scenario C	2.5	2.7	2.7	2.8	2.9	2.9	2.8	2.7	2.7	2.7	2.9
Scenario D	2.5	2.7	2.7	2.7	2.8	2.7	2.7	2.7	2.7	2.7	2.9

	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
	Millions of dollars										
GDP	6,337,744	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
GDP in scenario A	6,495,124	6,815,813	7,235,079	7,577,084	8,010,315	8,512,490	8,969,464	9,509,980	10,082,824	10,396,528	10,733,588
GDP in scenario B	6,515,711	6,837,580	7,256,189	7,597,208	8,031,684	8,533,352	8,990,650	9,529,791	10,098,969	10,414,785	10,751,493
GDP in scenario C	6,515,410	6,838,426	7,257,585	7,600,648	8,034,824	8,539,094	8,993,329	9,530,358	10,097,908	10,409,475	10,743,502
GDP in scenario D	6,517,268	6,838,562	7,258,581	7,597,809	8,030,540	8,532,485	8,985,561	9,526,281	10,098,146	10,410,270	10,747,342
	Percent change in GDP										
Scenario A	2.5	2.4	2.3	2.4	2.5	2.5	2.5	2.6	2.7	2.7	2.5
Scenario B	2.8	2.7	2.6	2.7	2.7	2.8	2.8	2.8	2.9	2.8	2.7
Scenario C	2.8	2.7	2.6	2.7	2.8	2.8	2.8	2.8	2.9	2.8	2.6
Scenario D	2.8	2.7	2.6	2.7	2.7	2.7	2.7	2.8	2.9	2.8	2.7

NOTES. Percent change is calculated from GDP for each year.
Adjusted GDP incorporates the impact of treating R&D as investment.
Scenario A uses an input price index.
Scenario B uses a multifactor productivity-adjusted price index.
Scenario C uses a high-productivity service industries price index.
Scenario D uses a top four R&D performers price index.

Table 1.3 Gross Domestic Income (GDI) and GDI with R&D Adjustments, 1959–2002

	1959	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969
	Millions of dollars										
GDI	506,124	527,327	545,266	585,269	618,511	662,767	717,529	781,511	827,959	905,435	981,437
GDI in scenario A.....	515,279	537,039	555,342	595,781	629,908	675,631	731,826	797,863	846,433	926,765	1,005,779
GDI in scenario B.....	516,389	538,378	556,905	597,656	632,471	678,740	735,585	802,551	851,196	931,596	1,010,479
GDI in scenario C.....	516,769	538,685	557,276	597,900	632,675	678,852	735,638	802,153	850,768	931,143	1,009,288
GDI in scenario D.....	516,919	538,879	557,307	598,148	632,773	678,907	735,756	802,458	851,240	931,941	1,010,700
	Percent change in GDI										
Scenario A.....	1.8	1.8	1.8	1.8	1.8	1.9	2.0	2.1	2.2	2.4	2.5
Scenario B.....	2.0	2.1	2.1	2.1	2.3	2.4	2.5	2.7	2.8	2.9	3.0
Scenario C.....	2.1	2.2	2.2	2.2	2.3	2.4	2.5	2.6	2.8	2.8	2.8
Scenario D.....	2.1	2.2	2.2	2.2	2.3	2.4	2.5	2.7	2.8	2.9	3.0

	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980
	Millions of dollars										
GDI	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
GDI in scenario A.....	1,057,086	1,142,739	1,258,827	1,406,177	1,524,121	1,658,369	1,841,018	2,052,924	2,316,988	2,572,642	2,811,059
GDI in scenario B.....	1,061,265	1,146,688	1,262,387	1,410,041	1,528,716	1,662,613	1,845,551	2,057,971	2,322,973	2,579,522	2,817,856
GDI in scenario C.....	1,059,845	1,146,406	1,262,670	1,409,978	1,527,309	1,661,914	1,845,899	2,058,464	2,322,451	2,576,800	2,814,552
GDI in scenario D.....	1,061,780	1,147,519	1,263,221	1,410,660	1,528,069	1,662,840	1,846,861	2,059,520	2,323,475	2,578,727	2,816,041
	Percent change in GDI										
Scenario A.....	2.5	2.4	2.4	2.3	2.4	2.3	2.3	2.2	2.2	2.2	2.3
Scenario B.....	2.9	2.8	2.7	2.6	2.7	2.6	2.5	2.5	2.4	2.5	2.5
Scenario C.....	2.8	2.8	2.7	2.6	2.6	2.5	2.5	2.5	2.4	2.4	2.4
Scenario D.....	3.0	2.9	2.8	2.7	2.6	2.6	2.6	2.5	2.4	2.4	2.5

	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991
	Millions of dollars										
GDI	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
GDI in scenario A.....	3,169,461	3,335,114	3,579,607	4,017,321	4,310,916	4,526,179	4,833,130	5,245,614	5,574,043	5,877,526	6,076,314
GDI in scenario B.....	3,177,476	3,341,917	3,586,733	4,025,854	4,320,477	4,536,173	4,844,474	5,259,882	5,591,696	5,897,068	6,097,303
GDI in scenario C.....	3,174,297	3,341,474	3,588,114	4,029,178	4,326,747	4,543,991	4,849,351	5,263,554	5,592,059	5,895,379	6,095,120
GDI in scenario D.....	3,175,087	3,341,791	3,587,022	4,026,103	4,320,110	4,536,000	4,844,363	5,259,461	5,590,068	5,895,640	6,097,189
	Percent change in GDI										
Scenario A.....	2.3	2.5	2.5	2.5	2.6	2.5	2.4	2.4	2.4	2.5	2.6
Scenario B.....	2.6	2.7	2.7	2.7	2.8	2.7	2.7	2.7	2.7	2.8	2.9
Scenario C.....	2.5	2.7	2.8	2.8	2.9	2.9	2.8	2.7	2.7	2.8	2.9
Scenario D.....	2.5	2.7	2.8	2.7	2.8	2.7	2.7	2.7	2.7	2.8	2.9

	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
	Millions of dollars										
GDI	6,234,996	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
GDI in scenario A.....	6,392,376	6,676,272	7,092,582	7,475,899	7,916,628	8,441,836	8,984,111	9,545,705	10,209,987	10,486,171	10,754,578
GDI in scenario B.....	6,412,963	6,698,039	7,113,692	7,496,023	7,937,997	8,462,698	9,005,297	9,565,516	10,226,132	10,504,428	10,772,483
GDI in scenario C.....	6,412,662	6,698,885	7,115,088	7,499,463	7,941,137	8,468,440	9,007,976	9,566,083	10,225,071	10,499,118	10,764,492
GDI in scenario D.....	6,414,520	6,699,021	7,116,084	7,496,624	7,936,853	8,461,831	9,000,208	9,562,006	10,225,309	10,499,913	10,768,332
	Percent change in GDI										
Scenario A.....	2.5	2.4	2.4	2.5	2.5	2.5	2.5	2.6	2.7	2.6	2.5
Scenario B.....	2.9	2.8	2.7	2.7	2.8	2.8	2.8	2.8	2.8	2.8	2.7
Scenario C.....	2.8	2.8	2.7	2.8	2.8	2.9	2.8	2.8	2.8	2.8	2.6
Scenario D.....	2.9	2.8	2.7	2.7	2.8	2.8	2.7	2.8	2.8	2.8	2.6

Notes. Percent change is calculated from GDI for each year.
Adjusted GDI incorporates the impact of treating R&D as investment.

Table 1.4 National Saving and National Saving with R&D Adjustment as a Percent of Adjusted Gross National Income, 1959–2002

	1959	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969
National saving	20.9	21.0	20.8	21.2	21.4	21.5	21.9	21.4	20.5	20.0	20.1
National saving in scenario A	22.9	23.2	23.1	23.4	23.8	23.9	24.3	23.8	22.8	22.2	22.2
National saving in scenario B	22.9	23.1	23.0	23.4	23.7	23.8	24.1	23.7	22.7	22.1	22.1
National saving in scenario C	22.9	23.1	23.0	23.4	23.6	23.8	24.1	23.7	22.7	22.1	22.1
National saving in scenario D	22.9	23.1	23.0	23.3	23.6	23.8	24.1	23.7	22.7	22.1	22.1

	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980
National saving	18.6	18.6	19.2	21.1	20.0	18.2	18.8	19.6	20.9	21.1	19.7
National saving in scenario A	20.6	20.5	21.1	22.8	21.8	20.0	20.6	21.3	22.6	22.8	21.6
National saving in scenario B	20.5	20.5	21.0	22.8	21.7	19.9	20.5	21.3	22.5	22.7	21.6
National saving in scenario C	20.6	20.5	21.0	22.8	21.8	19.9	20.5	21.3	22.5	22.8	21.6
National saving in scenario D	20.5	20.5	21.0	22.7	21.8	19.9	20.5	21.3	22.5	22.7	21.6

	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991
National saving	20.9	19.1	17.3	19.6	18.1	16.5	16.8	17.8	17.3	16.3	16.2
National saving in scenario A	22.8	21.1	19.4	21.6	20.4	18.8	19.1	19.9	19.4	18.5	18.5
National saving in scenario B	22.7	21.1	19.3	21.6	20.3	18.8	19.0	19.9	19.4	18.5	18.4
National saving in scenario C	22.7	21.1	19.3	21.6	20.3	18.8	19.0	19.9	19.4	18.5	18.4
National saving in scenario D	22.7	21.1	19.3	21.6	20.3	18.8	19.0	19.9	19.4	18.5	18.4

	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
National saving	15.1	14.7	15.4	16.2	16.6	17.7	18.2	17.9	17.7	16.2	14.2
National saving in scenario A	17.4	16.9	17.5	18.2	18.7	19.8	20.3	20.0	19.9	18.4	16.4
National saving in scenario B	17.3	16.8	17.4	18.2	18.7	19.7	20.2	20.0	19.9	18.3	16.3
National saving in scenario C	17.3	16.8	17.4	18.2	18.7	19.7	20.2	20.0	19.9	18.3	16.4
National saving in scenario D	17.3	16.8	17.4	18.2	18.7	19.7	20.2	20.0	19.9	18.3	16.3

NOTE. Adjusted national saving incorporates the impact of treating R&D as investment.

Table 1.5 Aggregate Current-Cost Returns to R&D Assets, 1959–2002

[Millions of chained (2000) dollars]

	1959	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969
Business											
Net returns	3,689	3,788	3,981	4,362	4,475	4,762	5,156	5,403	5,444	5,943	6,256
Depreciation	4,001	4,297	4,483	4,610	4,605	4,655	4,771	5,002	5,363	5,855	6,549
Nonprofit institutions serving households											
Net returns	36	37	40	48	54	63	74	84	89	100	104
Depreciation	94	101	109	122	135	149	165	187	212	237	262
Government											
Net returns	1,336	1,500	1,768	2,225	2,651	3,246	3,961	4,537	4,821	5,313	5,368
Depreciation	3,496	4,107	4,806	5,674	6,582	7,657	8,846	10,135	11,462	12,633	13,561

	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980
Business											
Net returns	6,361	7,200	7,869	8,664	8,741	9,904	11,380	13,017	14,213	14,920	15,626
Depreciation	7,493	8,272	8,976	9,793	10,984	12,619	14,205	15,748	17,058	19,054	21,497
Nonprofit institutions serving households											
Net returns	104	117	128	140	138	156	180	206	226	236	244
Depreciation	295	325	353	381	419	480	542	602	654	728	809
Government											
Net returns	5,147	5,559	5,832	6,127	5,875	6,380	7,067	7,800	8,202	8,212	8,159
Depreciation	14,631	15,413	16,055	16,713	17,816	19,616	21,288	22,771	23,755	25,309	27,087

	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991
Business											
Net returns	18,963	20,898	24,731	30,911	33,998	36,039	39,079	43,635	46,511	48,663	51,236
Depreciation	24,645	29,090	32,527	36,241	40,548	44,862	48,555	52,683	57,631	63,458	70,774
Nonprofit institutions serving households											
Net returns	290	312	359	434	464	489	543	631	707	773	840
Depreciation	909	1,048	1,140	1,229	1,335	1,470	1,628	1,838	2,114	2,432	2,799
Government											
Net returns	9,362	9,704	10,759	12,575	13,061	13,471	14,526	16,173	17,251	17,997	18,591
Depreciation	29,363	32,598	34,147	35,577	37,591	40,465	43,552	47,120	51,581	56,633	61,971

	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
Business											
Net returns	54,646	57,143	60,390	62,383	67,699	73,935	74,187	78,729	84,244	83,335	88,324
Depreciation	76,371	79,972	82,617	83,201	87,299	93,770	98,798	109,445	122,177	134,688	141,814
Nonprofit institutions serving households											
Net returns	924	1,003	1,101	1,158	1,249	1,343	1,322	1,367	1,413	1,366	1,465
Depreciation	3,115	3,387	3,635	3,727	3,887	4,110	4,249	4,587	4,945	5,328	5,674
Government											
Net returns	19,400	20,118	21,258	21,579	22,425	23,199	21,886	21,608	21,242	19,654	20,478
Depreciation	65,426	67,944	70,180	69,452	69,781	71,003	70,335	72,489	74,342	76,654	79,343

NOTE. Implemented using assumptions defined in scenario D.

Table 2.1. Historical-Cost Investment Flows in R&D Assets by Funder, 1959–2002

[Millions of dollars]

	1959	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969
Total R&D investment	12,575	13,819	14,625	15,662	17,483	19,094	20,374	22,321	23,728	25,109	26,286
Private	5,967	5,948	5,484	5,009	5,057	5,248	5,440	6,295	7,014	8,562	10,325
Business	5,834	5,807	5,318	4,811	4,840	5,025	5,180	6,004	6,697	8,223	9,968
Universities and colleges	16	18	19	21	22	28	38	46	52	56	59
Other nonprofit institutions serving households	117	123	147	177	195	195	222	244	266	284	298
Government	6,607	7,871	9,141	10,653	12,426	13,847	14,934	16,026	16,714	16,547	15,961
Federal Government extramural	4,785	5,876	6,962	8,264	9,713	10,729	11,492	12,312	12,786	12,520	11,751
Federal Government intramural	1,668	1,823	1,988	2,177	2,476	2,853	3,153	3,382	3,556	3,610	3,736
State and local governments ¹	111	123	136	150	165	181	194	215	226	253	298
Universities and colleges	44	48	54	62	72	84	95	116	146	164	176

	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980
Total R&D investment	26,627	27,460	29,404	31,738	34,330	36,757	40,523	44,432	49,694	56,878	65,461
Private	10,761	11,017	12,133	13,711	15,226	16,187	18,321	20,248	23,381	27,955	32,788
Business	10,363	10,590	11,680	13,241	14,696	15,582	17,646	19,491	22,509	26,963	31,673
Universities and colleges	64	70	70	68	74	81	90	108	134	156	174
Other nonprofit institutions serving households	334	358	384	402	457	523	585	649	738	836	940
Government	15,866	16,442	17,270	18,027	19,104	20,571	22,202	24,184	26,313	28,924	32,674
Federal Government extramural	11,288	11,427	11,802	12,227	12,895	13,911	15,209	16,839	18,367	20,229	22,980
Federal Government intramural	4,053	4,430	4,831	5,084	5,405	5,777	6,037	6,271	6,706	7,292	8,106
State and local governments ¹	329	363	394	438	480	529	566	613	693	772	844
Universities and colleges	196	221	243	278	324	354	390	461	547	631	743

	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991
Total R&D investment	74,798	82,924	91,680	103,948	116,262	122,744	127,619	135,602	143,924	154,233	163,575
Private	38,940	44,855	51,255	59,436	66,029	66,478	68,792	73,273	76,970	84,482	93,488
Business	37,656	43,423	49,685	57,706	64,082	64,270	66,320	70,383	73,726	80,962	89,578
Universities and colleges	202	230	242	269	304	342	383	428	478	546	618
Other nonprofit institutions serving households	1,082	1,201	1,328	1,462	1,643	1,866	2,089	2,463	2,765	2,974	3,293
Government	35,858	38,069	40,425	44,512	50,234	56,267	58,827	62,329	66,954	69,752	70,087
Federal Government extramural	25,257	26,733	27,976	30,718	34,877	39,397	41,811	44,273	47,568	49,401	49,557
Federal Government intramural	8,795	9,333	10,256	11,390	12,604	13,688	13,510	14,190	15,109	15,675	15,566
State and local governments ¹	952	1,026	1,083	1,169	1,326	1,511	1,634	1,779	1,914	2,039	2,128
Universities and colleges	854	978	1,110	1,235	1,427	1,671	1,872	2,086	2,362	2,636	2,836

	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
Total R&D investment	167,786	168,051	171,635	185,086	198,769	213,827	227,725	245,878	268,559	275,294	276,533
Private	94,842	93,106	94,715	108,937	121,293	133,804	146,481	163,863	185,749	186,207	178,269
Business	90,659	88,702	90,179	104,242	116,338	128,485	140,772	157,817	179,231	179,292	170,779
Universities and colleges	631	629	651	708	782	797	811	883	972	1,061	1,190
Other nonprofit institutions serving households	3,551	3,775	3,885	3,987	4,173	4,522	4,898	5,163	5,546	5,854	6,300
Government	72,945	74,945	76,920	76,149	77,476	80,023	81,244	82,015	82,810	89,087	98,264
Federal Government extramural	51,986	53,297	54,849	54,108	55,210	56,832	57,638	57,953	58,032	61,831	68,713
Federal Government intramural	15,867	16,405	16,599	16,318	16,159	16,570	16,566	16,481	16,450	18,249	19,922
State and local governments ¹	2,162	2,178	2,215	2,344	2,473	2,590	2,683	2,851	3,080	3,269	3,482
Universities and colleges	2,930	3,066	3,257	3,379	3,633	4,032	4,357	4,730	5,249	5,739	6,147

1. Excludes universities and colleges.

Table 2.2. Real Investment Flows in R&D Assets by Funder, 1959–2002

[Millions of chained (2000) dollars]

	1959	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969
Total R&D investment	19,409	21,224	22,509	23,972	27,174	29,844	31,749	34,247	35,446	36,558	37,446
Private	9,211	9,135	8,440	7,666	7,860	8,202	8,477	9,659	10,478	12,466	14,709
Business.....	9,005	8,919	8,185	7,364	7,522	7,854	8,072	9,212	10,004	11,972	14,201
Universities and colleges.....	25	27	29	31	34	44	60	71	77	81	84
Other nonprofit institutions serving households.....	181	190	226	271	303	305	345	375	397	413	424
Government	10,199	12,089	14,069	16,306	19,314	21,642	23,271	24,589	24,968	24,092	22,738
Federal Government extramural.....	7,385	9,024	10,715	12,649	15,097	16,769	17,907	18,891	19,100	18,228	16,740
Federal Government intramural.....	2,574	2,801	3,060	3,332	3,848	4,459	4,913	5,190	5,312	5,256	5,322
State and local governments ¹	171	189	210	229	257	282	302	330	338	369	425
Universities and colleges.....	68	74	84	95	112	131	149	178	218	239	250

	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980
Total R&D investment	36,008	35,844	37,862	40,088	41,528	40,811	42,011	43,974	48,227	53,519	59,495
Private	14,552	14,382	15,624	17,318	18,419	17,972	18,994	20,039	22,690	26,304	29,799
Business.....	14,014	13,823	15,040	16,724	17,777	17,301	18,294	19,290	21,845	25,370	28,786
Universities and colleges.....	86	91	90	86	89	90	93	107	130	146	159
Other nonprofit institutions serving households.....	452	467	494	508	552	581	607	642	716	787	855
Government	21,455	21,463	22,238	22,769	23,109	22,839	23,017	23,935	25,536	27,216	29,695
Federal Government extramural.....	15,265	14,917	15,197	15,444	15,598	15,445	15,767	16,665	17,825	19,034	20,885
Federal Government intramural.....	5,480	5,783	6,221	6,421	6,538	6,414	6,258	6,206	6,508	6,861	7,367
State and local governments ¹	444	474	508	553	580	587	587	607	673	726	767
Universities and colleges.....	266	289	313	351	392	393	405	456	531	594	675

	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991
Total R&D investment	64,962	67,722	74,035	84,296	95,657	101,469	106,655	113,115	118,375	123,975	126,619
Private	33,819	36,632	41,390	48,199	54,326	54,955	57,492	61,123	63,307	67,908	72,366
Business.....	32,704	35,463	40,123	46,796	52,725	53,130	55,426	58,711	60,639	65,079	69,339
Universities and colleges.....	176	188	195	218	250	282	320	357	394	439	478
Other nonprofit institutions serving households.....	939	981	1,072	1,185	1,351	1,543	1,746	2,054	2,274	2,390	2,549
Government	31,143	31,090	32,644	36,097	41,331	46,514	49,164	51,992	55,069	56,067	54,252
Federal Government extramural.....	21,935	21,832	22,591	24,910	28,695	32,568	34,943	36,931	39,124	39,710	38,361
Federal Government intramural.....	7,639	7,622	8,282	9,237	10,370	11,315	11,290	11,836	12,427	12,600	12,049
State and local governments ¹	827	838	875	948	1,091	1,249	1,366	1,484	1,574	1,639	1,647
Universities and colleges.....	742	798	896	1,001	1,174	1,381	1,564	1,740	1,943	2,119	2,195

	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
Total R&D investment	128,330	129,120	132,713	149,408	165,738	184,926	213,125	239,359	268,559	285,661	288,335
Private	72,539	71,537	73,237	87,938	101,137	115,719	137,090	159,519	185,749	193,219	185,877
Business.....	69,340	68,153	69,729	84,148	97,005	111,119	131,747	153,633	179,231	186,044	178,067
Universities and colleges.....	483	483	504	572	652	689	759	860	972	1,101	1,241
Other nonprofit institutions serving households.....	2,716	2,900	3,004	3,218	3,480	3,911	4,584	5,026	5,546	6,074	6,569
Government	55,791	57,583	59,477	61,470	64,601	69,207	76,035	79,841	82,810	92,442	102,458
Federal Government extramural.....	39,761	40,950	42,411	43,678	46,036	49,150	53,943	56,417	58,032	64,159	71,645
Federal Government intramural.....	12,136	12,604	12,835	13,172	13,474	14,330	15,504	16,044	16,450	18,936	20,773
State and local governments ¹	1,653	1,673	1,713	1,892	2,062	2,240	2,511	2,775	3,080	3,392	3,631
Universities and colleges.....	2,241	2,356	2,518	2,728	3,029	3,487	4,078	4,604	5,249	5,955	6,409

1. Excludes universities and colleges.

NOTE. Implemented using assumptions defined in scenario D.

Table 2.3. Historical-Cost Net Stock of R&D Assets by Funder, 1959–2002

[Millions of dollars]

	1959	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969
Total R&D net stock	43,541	49,792	55,851	61,961	68,838	76,175	83,595	91,702	99,895	108,137	116,231
Private	23,140	25,171	26,468	27,131	27,739	28,432	29,199	30,642	32,534	35,574	39,789
Business	22,622	24,600	25,829	26,405	26,921	27,531	28,193	29,518	31,284	34,198	38,289
Universities and colleges	86	90	94	99	104	115	133	156	180	205	229
Other nonprofit institutions serving households	432	481	545	627	714	787	874	969	1,069	1,171	1,271
Government	20,401	24,621	29,383	34,830	41,100	47,743	54,395	61,060	67,361	72,563	76,442
Federal Government extramural	13,278	16,721	20,653	25,199	30,404	35,768	41,032	46,267	51,153	55,061	57,672
Federal Government intramural	6,508	7,218	7,975	8,792	9,763	10,938	12,214	13,510	14,773	15,896	16,967
State and local governments ¹	431	480	534	593	657	725	796	875	953	1,044	1,164
Universities and colleges	184	201	221	246	275	312	353	407	482	561	640

	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980
Total R&D net stock	123,426	130,313	137,964	146,627	156,388	166,930	179,375	193,568	210,499	231,537	257,358
Private	43,775	47,399	51,513	56,469	62,083	67,743	74,529	82,079	91,394	103,543	118,340
Business	42,131	45,607	49,570	54,382	59,819	65,259	71,793	79,053	88,016	99,754	114,089
Universities and colleges	253	280	303	321	341	365	393	434	493	563	640
Other nonprofit institutions serving households	1,390	1,512	1,640	1,766	1,924	2,119	2,342	2,591	2,885	3,226	3,612
Government	79,652	82,913	86,451	90,158	94,305	99,187	104,846	111,489	119,106	127,994	139,018
Federal Government extramural	59,463	61,113	62,864	64,744	66,960	69,784	73,384	77,952	83,249	89,473	97,308
Federal Government intramural	18,171	19,543	21,080	22,620	24,227	25,936	27,630	29,286	31,096	33,176	35,698
State and local governments ¹	1,293	1,435	1,585	1,752	1,933	2,133	2,337	2,553	2,812	3,104	3,419
Universities and colleges	725	821	923	1,042	1,185	1,335	1,496	1,698	1,949	2,241	2,592

	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991
Total R&D net stock	287,942	321,455	358,041	400,487	447,957	494,302	538,204	582,905	628,598	676,974	726,735
Private	136,608	157,608	181,378	209,149	238,853	264,517	288,472	312,979	337,229	364,791	396,549
Business	131,807	152,203	175,331	202,409	231,323	256,074	279,009	302,262	325,119	351,241	381,415
Universities and colleges	731	834	933	1,042	1,167	1,308	1,466	1,642	1,838	2,068	2,329
Other nonprofit institutions serving households	4,070	4,571	5,114	5,698	6,363	7,135	7,997	9,075	10,272	11,482	12,805
Government	151,334	163,848	176,664	191,338	209,103	229,785	249,732	269,926	291,369	312,184	330,187
Federal Government extramural	106,075	114,891	123,535	133,419	145,667	160,259	174,895	189,614	205,172	220,093	232,919
Federal Government intramural	38,479	41,340	44,626	48,468	52,857	57,589	61,447	65,356	69,528	73,598	76,957
State and local governments ¹	3,787	4,168	4,544	4,944	5,429	6,013	6,623	7,275	7,955	8,648	9,319
Universities and colleges	2,994	3,449	3,958	4,507	5,150	5,923	6,766	7,681	8,714	9,845	10,992

	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
Total R&D net stock	772,928	812,435	849,332	893,137	943,028	999,364	1,060,105	1,128,526	1,207,664	1,281,162	1,344,780
Private	424,795	447,198	467,730	498,337	535,783	579,184	627,802	685,205	754,242	813,347	856,244
Business	408,062	428,902	447,982	477,208	513,240	555,103	602,051	657,725	724,855	781,972	822,646
Universities and colleges	2,563	2,760	2,949	3,162	3,410	3,636	3,841	4,082	4,369	4,694	5,091
Other nonprofit institutions serving households	14,169	15,536	16,799	17,967	19,132	20,445	21,909	23,398	25,019	26,681	28,506
Government	348,133	365,237	381,602	394,800	407,245	420,180	432,303	443,322	453,422	467,815	488,537
Federal Government extramural	246,068	258,457	270,424	279,910	288,993	298,214	306,797	314,384	320,906	329,963	344,028
Federal Government intramural	80,090	83,251	86,117	88,294	89,997	91,825	93,375	94,614	95,638	98,172	101,875
State and local governments ¹	9,921	10,447	10,929	11,458	12,027	12,618	13,207	13,863	14,632	15,461	16,363
Universities and colleges	12,054	13,082	14,132	15,138	16,227	17,523	18,925	20,461	22,247	24,218	26,271

1. Excludes universities and colleges.

Note. Implemented using assumptions defined in scenario D.

Table 2.4. Current-Cost Net Stock of R&D Assets by Funder, 1959–2002

[Millions of chained (2000) dollars]

	1959	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969
Total R&D net stock	44,928	50,300	55,629	60,574	66,086	72,644	79,964	88,767	97,903	106,707	116,824
Private	23,829	25,412	26,350	26,496	26,536	26,947	27,705	29,419	31,658	34,915	39,847
Business.....	23,284	24,826	25,706	25,780	25,745	26,082	26,738	28,326	30,429	33,553	38,335
Universities and colleges.....	97	97	99	101	104	113	130	154	180	205	232
Other nonprofit institutions serving households.....	448	488	545	615	687	752	837	940	1,050	1,158	1,279
Government	21,099	24,889	29,279	34,078	39,550	45,698	52,259	59,348	66,245	71,792	76,977
Federal Government extramural.....	13,633	16,806	20,498	24,592	29,223	34,223	39,421	44,977	50,314	54,482	58,078
Federal Government intramural.....	6,824	7,387	8,023	8,661	9,427	10,482	11,735	13,126	14,521	15,720	17,083
State and local governments ¹	449	489	536	582	633	694	763	849	936	1,032	1,171
Universities and colleges.....	193	206	223	242	266	299	340	397	475	557	646

	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980
Total R&D net stock	126,304	132,890	139,157	148,558	163,900	181,171	196,426	208,336	222,036	241,444	267,780
Private	44,646	48,183	51,814	57,084	64,921	73,302	81,274	87,919	95,932	107,451	122,580
Business.....	42,961	46,354	49,854	54,969	62,549	70,611	78,288	84,677	92,386	103,518	118,173
Universities and colleges.....	261	287	306	326	358	397	431	467	518	585	663
Other nonprofit institutions serving households.....	1,423	1,542	1,654	1,789	2,015	2,294	2,555	2,775	3,028	3,349	3,744
Government	81,658	84,708	87,342	91,474	98,979	107,870	115,152	120,417	126,104	133,992	145,200
Federal Government extramural.....	60,973	62,467	63,548	65,724	70,322	75,973	80,702	84,290	88,223	93,736	101,690
Federal Government intramural.....	18,617	19,940	21,267	22,922	25,392	28,145	30,273	31,577	32,889	34,713	37,282
State and local governments ¹	1,324	1,463	1,597	1,774	2,024	2,308	2,549	2,737	2,955	3,227	3,550
Universities and colleges.....	744	838	930	1,055	1,241	1,443	1,628	1,812	2,037	2,317	2,677

	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991
Total R&D net stock	303,062	334,452	359,444	386,788	419,786	452,274	484,144	522,241	565,008	614,795	658,363
Private	143,152	163,190	181,315	201,441	223,601	241,898	259,431	280,404	303,086	331,405	359,723
Business.....	138,114	157,582	175,258	194,943	216,554	234,173	250,895	270,739	292,097	318,968	345,858
Universities and colleges.....	767	865	934	1,004	1,092	1,197	1,322	1,479	1,665	1,896	2,133
Other nonprofit institutions serving households.....	4,271	4,743	5,123	5,495	5,955	6,529	7,213	8,185	9,323	10,540	11,732
Government	159,910	171,262	178,129	185,347	196,185	210,375	224,713	241,837	261,923	283,390	298,639
Federal Government extramural.....	112,127	120,123	124,595	129,267	136,682	146,746	157,454	170,002	184,582	199,938	210,795
Federal Government intramural.....	40,672	43,238	45,018	46,970	49,602	52,703	55,178	58,363	62,248	66,517	69,291
State and local governments ¹	3,981	4,335	4,563	4,774	5,083	5,499	5,961	6,531	7,171	7,878	8,465
Universities and colleges.....	3,130	3,565	3,952	4,336	4,818	5,428	6,120	6,942	7,922	9,058	10,087

	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
Total R&D net stock	683,625	696,604	694,650	697,116	710,649	714,429	726,280	761,111	803,138	844,879	887,686
Private	376,377	384,047	383,050	390,490	406,843	418,813	437,115	471,997	514,770	550,119	576,419
Business.....	361,396	368,134	366,639	373,736	389,606	401,371	419,252	453,279	495,094	529,271	553,928
Universities and colleges.....	2,294	2,396	2,443	2,502	2,611	2,635	2,654	2,768	2,916	3,122	3,428
Other nonprofit institutions serving households.....	12,687	13,518	13,968	14,252	14,625	14,808	15,209	15,950	16,760	17,727	19,063
Government	307,248	312,557	311,600	306,626	303,806	295,615	289,166	289,114	288,368	294,760	311,267
Federal Government extramural.....	217,320	221,333	220,990	217,553	215,764	209,946	205,312	205,031	203,897	207,395	218,634
Federal Government intramural.....	70,335	70,875	69,916	68,120	66,566	63,942	61,666	60,771	59,782	60,913	63,986
State and local governments ¹	8,794	8,975	8,953	8,948	9,053	8,986	8,976	9,242	9,594	10,076	10,748
Universities and colleges.....	10,798	11,373	11,741	12,005	12,423	12,742	13,212	14,071	15,094	16,376	17,898

1. Excludes universities and colleges.

Note. Implemented using assumptions defined in scenario D.

Table 2.5. Real Net Stock of R&D Assets by Funder, 1959-2002

[Millions of chained (2000) dollars]

	1959	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969
Total R&D net stock	69,176	77,338	85,382	93,427	103,004	113,371	123,643	134,377	144,372	153,667	162,093
Private	36,690	39,071	40,443	40,867	41,360	42,054	42,839	44,535	46,684	50,281	55,287
Business.....	35,850	38,170	39,454	39,762	40,128	40,705	41,343	42,880	44,872	48,319	53,190
Universities and colleges.....	150	150	152	156	162	176	201	233	265	295	322
Other nonprofit institutions serving households.....	690	751	836	948	1,071	1,173	1,295	1,422	1,548	1,667	1,775
Government	32,486	38,267	44,939	52,560	61,644	71,317	80,804	89,842	97,688	103,386	106,806
Federal Government extramural.....	20,990	25,840	31,461	37,929	45,548	53,410	60,954	68,086	74,195	78,459	80,582
Federal Government intramural.....	10,506	11,358	12,314	13,359	14,694	16,358	18,145	19,870	21,413	22,639	23,702
State and local governments ¹	692	752	822	898	986	1,083	1,180	1,285	1,380	1,486	1,625
Universities and colleges.....	298	317	342	373	415	466	525	601	700	802	896

	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980
Total R&D net stock	167,784	172,286	177,461	183,588	189,770	194,259	198,913	204,169	212,152	223,244	237,847
Private	59,308	62,466	66,077	70,544	75,169	78,597	82,303	86,160	91,662	99,352	108,878
Business.....	57,071	60,095	63,577	67,931	72,421	75,711	79,279	82,983	88,273	95,715	104,963
Universities and colleges.....	347	372	391	402	414	425	436	458	495	541	589
Other nonprofit institutions serving households.....	1,890	1,999	2,109	2,211	2,333	2,460	2,587	2,720	2,893	3,096	3,326
Government	108,476	109,820	111,385	113,044	114,602	115,662	116,610	118,008	120,491	123,892	128,969
Federal Government extramural.....	80,998	80,985	81,040	81,221	81,422	81,461	81,724	82,604	84,296	86,670	90,323
Federal Government intramural.....	24,731	25,852	27,122	28,327	29,400	30,179	30,657	30,946	31,425	32,096	33,115
State and local governments ¹	1,759	1,896	2,036	2,192	2,343	2,475	2,581	2,683	2,823	2,984	3,154
Universities and colleges.....	989	1,086	1,187	1,304	1,437	1,547	1,649	1,776	1,947	2,142	2,378

	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991
Total R&D net stock	255,115	271,602	290,874	315,934	346,203	375,919	404,237	432,565	459,376	484,866	506,564
Private	120,504	132,524	146,726	164,540	184,407	201,060	216,612	232,255	246,422	261,366	276,782
Business.....	116,263	127,969	141,825	159,232	178,595	194,639	209,485	224,250	237,488	251,558	266,114
Universities and colleges.....	646	703	756	820	901	995	1,104	1,225	1,354	1,495	1,641
Other nonprofit institutions serving households.....	3,595	3,852	4,146	4,488	4,911	5,427	6,023	6,780	7,580	8,313	9,027
Government	134,610	139,078	144,148	151,394	161,796	174,859	187,625	200,311	212,954	223,499	229,782
Federal Government extramural.....	94,388	97,550	100,827	105,587	112,724	121,972	131,466	140,810	150,073	157,683	162,192
Federal Government intramural.....	34,237	35,113	36,430	38,365	40,907	43,805	46,071	48,341	50,610	52,460	53,315
State and local governments ¹	3,351	3,520	3,693	3,900	4,192	4,571	4,978	5,409	5,830	6,213	6,513
Universities and colleges.....	2,635	2,895	3,198	3,542	3,973	4,512	5,110	5,750	6,441	7,143	7,761

	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
Total R&D net stock	524,059	536,926	548,681	571,854	603,373	642,243	693,102	750,886	817,981	878,812	930,634
Private	288,526	296,015	302,558	320,324	345,428	376,497	417,146	465,656	524,284	572,214	604,308
Business.....	277,042	283,749	289,596	306,580	330,794	360,817	400,100	447,190	504,244	550,528	580,728
Universities and colleges.....	1,759	1,847	1,930	2,053	2,217	2,369	2,532	2,731	2,970	3,247	3,594
Other nonprofit institutions serving households.....	9,726	10,419	11,033	11,691	12,418	13,311	14,514	15,736	17,070	18,439	19,985
Government	235,532	240,912	246,123	251,529	257,945	265,746	275,956	285,230	293,697	306,599	326,327
Federal Government extramural.....	166,595	170,598	174,553	178,461	183,194	188,733	195,933	202,276	207,666	215,724	229,212
Federal Government intramural.....	53,918	54,629	55,224	55,880	56,518	57,481	58,849	59,954	60,887	63,360	67,082
State and local governments ¹	6,742	6,918	7,072	7,340	7,687	8,078	8,566	9,118	9,772	10,480	11,269
Universities and colleges.....	8,278	8,766	9,274	9,848	10,547	11,454	12,608	13,882	15,373	17,034	18,764

1. Excludes universities and colleges.

NOTE: Implemented using assumptions defined in scenario D.

Table 2.6. Historical-Cost Depreciation of R&D Assets by Funder, 1959–2002

[Millions of dollars]

	1959	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969
Total R&D depreciation	6,574	7,568	8,566	9,552	10,605	11,758	12,954	14,213	15,535	16,867	18,192
Private	3,557	3,917	4,187	4,346	4,449	4,554	4,673	4,852	5,122	5,522	6,111
Business	3,477	3,829	4,089	4,235	4,324	4,415	4,518	4,679	4,930	5,309	5,877
Universities and colleges	14	14	15	16	16	18	20	23	27	31	35
Other nonprofit institutions serving households	66	74	83	95	109	122	135	149	165	182	198
Government	3,017	3,650	4,379	5,206	6,156	7,203	8,281	9,361	10,412	11,345	12,082
Federal Government extramural	1,921	2,432	3,030	3,718	4,508	5,365	6,227	7,078	7,899	8,612	9,140
Federal Government intramural	1,001	1,113	1,232	1,359	1,504	1,678	1,877	2,086	2,293	2,487	2,665
State and local governments ¹	66	74	82	91	101	112	123	136	148	162	179
Universities and colleges	29	31	34	38	42	48	54	62	72	85	97

	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980
Total R&D depreciation	19,432	20,573	21,752	23,075	24,569	26,215	28,079	30,239	32,762	35,841	39,640
Private	6,775	7,392	8,020	8,755	9,612	10,526	11,536	12,698	14,065	15,806	17,990
Business	6,521	7,114	7,717	8,429	9,260	10,141	11,112	12,231	13,546	15,225	17,339
Universities and colleges	39	43	47	51	54	57	61	67	75	86	98
Other nonprofit institutions serving households	216	235	256	276	299	328	362	400	444	495	554
Government	12,656	13,181	13,732	14,320	14,956	15,689	16,543	17,541	18,697	20,035	21,650
Federal Government extramural	9,497	9,776	10,052	10,347	10,679	11,087	11,608	12,271	13,070	14,005	15,144
Federal Government intramural	2,849	3,058	3,294	3,543	3,798	4,067	4,343	4,615	4,896	5,211	5,584
State and local governments ¹	199	221	245	271	299	330	362	396	435	480	529
Universities and colleges	111	125	141	159	181	204	230	259	296	340	392

	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991
Total R&D depreciation	44,214	49,411	55,094	61,502	68,793	76,399	83,717	90,901	98,230	105,857	113,814
Private	20,671	23,855	27,485	31,664	36,325	40,814	44,837	48,766	52,720	56,921	61,730
Business	19,937	23,028	26,557	30,628	35,168	39,519	43,385	47,130	50,869	54,840	59,405
Universities and colleges	111	127	143	160	179	201	225	252	282	317	356
Other nonprofit institutions serving households	623	701	785	877	978	1,094	1,227	1,384	1,569	1,764	1,969
Government	23,542	25,555	27,609	29,838	32,468	35,586	38,880	42,134	45,510	48,937	52,084
Federal Government extramural	16,491	17,916	19,332	20,834	22,629	24,805	27,175	29,555	32,010	34,481	36,731
Federal Government intramural	6,014	6,472	6,970	7,548	8,216	8,955	9,652	10,281	10,937	11,605	12,207
State and local governments ¹	584	645	706	769	841	928	1,025	1,127	1,235	1,346	1,457
Universities and colleges	453	522	601	686	783	898	1,029	1,171	1,329	1,505	1,690

	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
Total R&D depreciation	121,594	128,543	134,738	141,281	148,878	157,491	166,984	177,457	189,421	201,797	212,914
Private	66,595	70,702	74,183	78,330	83,848	90,403	97,864	106,460	116,712	127,102	135,372
Business	64,012	67,862	71,099	75,015	80,307	86,622	93,823	102,144	112,101	122,175	130,104
Universities and colleges	397	432	463	495	533	571	606	642	685	735	793
Other nonprofit institutions serving households	2,187	2,409	2,622	2,819	3,008	3,209	3,434	3,674	3,926	4,192	4,475
Government	54,999	57,841	60,555	62,952	65,031	67,088	69,120	70,997	72,709	74,695	77,542
Federal Government extramural	38,837	40,907	42,882	44,622	46,127	47,611	49,055	50,366	51,510	52,773	54,648
Federal Government intramural	12,734	13,244	13,733	14,141	14,456	14,742	15,016	15,242	15,426	15,714	16,220
State and local governments ¹	1,560	1,651	1,733	1,815	1,904	1,998	2,094	2,195	2,310	2,440	2,580
Universities and colleges	1,869	2,038	2,207	2,373	2,543	2,736	2,955	3,193	3,463	3,767	4,094

1. Excludes universities and colleges.

NOTE: Implemented using assumptions defined in scenario D.

Table 2.7. Current-Cost Depreciation of R&D Assets by Funder, 1959–2002

[Millions of current (2000) dollars]

	1959	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969
Total R&D depreciation	7,591	8,505	9,399	10,406	11,322	12,461	13,782	15,325	17,037	18,725	20,371
Private	4,095	4,398	4,593	4,732	4,739	4,804	4,936	5,189	5,575	6,092	6,811
Business.....	4,001	4,297	4,483	4,610	4,605	4,655	4,771	5,002	5,363	5,855	6,549
Universities and colleges.....	18	17	17	18	18	19	22	26	30	35	40
Other nonprofit institutions serving households.....	76	84	92	104	116	129	144	161	182	202	222
Government	3,496	4,107	4,806	5,674	6,582	7,657	8,846	10,135	11,462	12,633	13,561
Federal Government extramural.....	2,208	2,718	3,310	4,038	4,811	5,699	6,650	7,664	8,696	9,591	10,261
Federal Government intramural.....	1,177	1,269	1,367	1,494	1,617	1,788	2,006	2,258	2,523	2,768	2,990
State and local governments ¹	77	84	91	100	109	119	132	146	163	180	201
Universities and colleges.....	34	36	38	42	45	51	58	67	80	94	110

	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980
Total R&D depreciation	22,419	24,011	25,384	26,888	29,219	32,714	36,034	39,121	41,467	45,091	49,393
Private	7,788	8,598	9,330	10,174	11,404	13,099	14,746	16,350	17,712	19,782	22,306
Business.....	7,493	8,272	8,976	9,793	10,984	12,619	14,205	15,748	17,058	19,054	21,497
Universities and colleges.....	45	51	55	59	64	72	79	87	95	107	121
Other nonprofit institutions serving households.....	249	275	298	322	356	408	463	515	559	620	688
Government	14,631	15,413	16,055	16,713	17,816	19,616	21,288	22,771	23,755	25,309	27,087
Federal Government extramural.....	10,981	11,437	11,760	12,084	12,729	13,876	14,956	15,949	16,624	17,706	18,960
Federal Government intramural.....	3,292	3,571	3,845	4,129	4,518	5,075	5,576	5,979	6,212	6,578	6,986
State and local governments ¹	230	258	285	315	355	410	463	511	548	601	657
Universities and colleges.....	128	147	165	185	214	254	293	332	371	423	484

	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991
Total R&D depreciation	54,916	62,736	67,814	73,047	79,473	86,798	93,735	101,641	111,326	122,523	135,544
Private	25,553	30,137	33,667	37,470	41,882	46,332	50,183	54,521	59,745	65,889	73,573
Business.....	24,645	29,090	32,527	36,241	40,548	44,862	48,555	52,683	57,631	63,458	70,774
Universities and colleges.....	138	161	176	190	207	228	252	283	322	370	429
Other nonprofit institutions serving households.....	771	887	964	1,039	1,128	1,243	1,376	1,555	1,792	2,062	2,371
Government	29,363	32,598	34,147	35,577	37,591	40,465	43,552	47,120	51,581	56,633	61,971
Federal Government extramural.....	20,577	22,861	23,917	24,848	26,203	28,210	30,450	33,072	36,306	39,934	43,732
Federal Government intramural.....	7,503	8,260	8,625	9,004	9,515	10,182	10,798	11,468	12,350	13,374	14,461
State and local governments ¹	725	818	870	914	971	1,053	1,147	1,262	1,403	1,563	1,740
Universities and colleges.....	558	659	735	811	902	1,020	1,156	1,319	1,522	1,763	2,038

	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
Total R&D depreciation	144,913	151,303	156,432	156,380	160,967	168,883	173,382	186,521	201,464	216,670	226,832
Private	79,486	83,359	86,252	86,928	91,186	97,880	103,407	114,032	127,122	140,016	147,489
Business.....	76,371	79,972	82,617	83,201	87,299	93,770	98,798	109,445	122,177	134,688	141,814
Universities and colleges.....	478	514	544	556	585	622	636	680	732	794	858
Other nonprofit institutions serving households.....	2,637	2,873	3,091	3,171	3,302	3,488	3,613	3,907	4,213	4,534	4,817
Government	65,426	67,944	70,180	69,452	69,781	71,003	70,335	72,489	74,342	76,654	79,343
Federal Government extramural.....	46,230	48,086	49,735	49,266	49,535	50,426	49,945	51,437	52,642	54,064	55,777
Federal Government intramural.....	15,078	15,480	15,829	15,506	15,395	15,456	15,104	15,346	15,518	15,865	16,352
State and local governments ¹	1,864	1,948	2,016	2,011	2,058	2,137	2,161	2,284	2,426	2,586	2,726
Universities and colleges.....	2,255	2,431	2,600	2,669	2,793	2,983	3,124	3,422	3,757	4,138	4,488

1. Excludes universities and colleges.

NOTE: Implemented using assumptions defined in scenario D.

Table 2.8. Real Depreciation of R&D Assets by Funder, 1959–2002

[Millions of current (2000) dollars]

	1959	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969
Total R&D depreciation	11,716	13,063	14,466	15,926	17,597	19,477	21,477	23,513	25,450	27,263	29,020
Private	6,321	6,754	7,069	7,242	7,366	7,508	7,693	7,962	8,329	8,870	9,702
Business.....	6,176	6,599	6,901	7,056	7,157	7,276	7,435	7,675	8,012	8,525	9,329
Universities and colleges.....	27	27	27	27	29	30	34	40	45	51	57
Other nonprofit institutions serving households.....	118	128	141	159	181	202	224	248	271	294	316
Government	5,395	6,308	7,397	8,684	10,231	11,968	13,784	15,551	17,122	18,393	19,318
Federal Government extramural.....	3,408	4,175	5,094	6,181	7,478	8,908	10,363	11,760	12,991	13,964	14,617
Federal Government intramural.....	1,816	1,949	2,104	2,287	2,513	2,795	3,126	3,464	3,769	4,030	4,259
State and local governments ¹	119	129	140	153	169	186	205	225	243	262	286
Universities and colleges.....	52	55	59	64	71	79	90	103	119	137	156

	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980
Total R&D depreciation	30,317	31,342	32,687	33,961	35,345	36,322	37,357	38,718	40,243	42,428	44,891
Private	10,532	11,223	12,013	12,851	13,794	14,543	15,288	16,182	17,189	18,614	20,273
Business.....	10,134	10,798	11,558	12,370	13,287	14,011	14,726	15,586	16,554	17,929	19,538
Universities and colleges.....	62	66	71	75	77	79	82	86	92	101	110
Other nonprofit institutions serving households.....	337	358	384	406	430	453	480	510	543	584	625
Government	19,786	20,119	20,673	21,110	21,551	21,779	22,069	22,536	23,054	23,814	24,618
Federal Government extramural.....	14,850	14,929	15,143	15,263	15,397	15,406	15,505	15,785	16,133	16,660	17,232
Federal Government intramural.....	4,451	4,662	4,951	5,216	5,465	5,635	5,780	5,917	6,029	6,190	6,349
State and local governments ¹	311	337	368	398	429	456	480	506	532	566	597
Universities and colleges.....	173	191	212	234	259	282	304	329	360	398	440

	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991
Total R&D depreciation	47,694	51,235	54,762	59,237	65,388	71,753	78,337	84,786	91,564	98,486	104,921
Private	22,193	24,613	27,188	30,386	34,459	38,301	41,940	45,480	49,140	52,963	56,951
Business.....	21,404	23,757	26,267	29,389	33,361	37,086	40,579	43,947	47,401	51,008	54,784
Universities and colleges.....	119	131	142	154	170	188	211	236	265	297	332
Other nonprofit institutions serving households.....	670	724	779	843	928	1,027	1,150	1,297	1,474	1,658	1,835
Government	25,501	26,622	27,575	28,851	30,928	33,451	36,398	39,306	42,425	45,523	47,970
Federal Government extramural.....	17,871	18,670	19,314	20,150	21,559	23,320	25,448	27,588	29,861	32,099	33,852
Federal Government intramural.....	6,516	6,746	6,965	7,302	7,828	8,417	9,025	9,566	10,158	10,750	11,194
State and local governments ¹	629	668	702	741	799	871	959	1,052	1,154	1,256	1,347
Universities and colleges.....	485	538	593	658	742	843	966	1,100	1,251	1,417	1,577

	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
Total R&D depreciation	110,836	116,252	120,958	126,236	134,218	146,056	162,266	181,575	201,464	224,830	236,513
Private	60,795	64,048	66,693	70,172	76,033	84,650	96,441	111,009	127,122	145,289	153,783
Business.....	58,412	61,446	63,882	67,163	72,792	81,095	92,464	106,543	122,177	139,760	147,867
Universities and colleges.....	366	395	421	449	488	538	596	662	732	824	894
Other nonprofit institutions serving households.....	2,017	2,207	2,390	2,560	2,753	3,017	3,381	3,804	4,213	4,705	5,022
Government	50,041	52,204	54,265	56,064	58,185	61,406	65,826	70,567	74,342	79,541	82,730
Federal Government extramural.....	35,359	36,946	38,457	39,769	41,303	43,611	46,743	50,073	52,642	56,100	58,158
Federal Government intramural.....	11,532	11,894	12,240	12,517	12,837	13,367	14,136	14,939	15,518	16,463	17,050
State and local governments ¹	1,425	1,497	1,559	1,624	1,716	1,848	2,022	2,224	2,426	2,683	2,843
Universities and colleges.....	1,725	1,867	2,010	2,154	2,329	2,580	2,924	3,331	3,757	4,294	4,679

1. Excludes universities and colleges.

NOTE: Implemented using assumptions defined in scenario D.

Table 3.1. Historical-Cost Investment in R&D Assets by Performer, 1959–2002

[Millions of dollars]

	1959	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969
Total R&D investment	12,575	13,819	14,625	15,662	17,483	19,094	20,374	22,321	23,728	25,109	26,286
Private	10,423	11,437	11,985	12,711	14,090	15,179	16,021	17,588	18,662	19,846	20,789
Business	9,283	10,108	10,404	11,076	12,270	13,117	13,873	15,309	16,095	17,178	18,047
Universities and colleges	286	346	406	467	529	605	692	784	873	931	954
Other nonprofit institutions serving households	178	208	256	311	376	431	496	520	606	610	592
Federally funded R&D centers											
Business	438	498	576	442	428	479	383	364	428	424	475
Universities and colleges	192	209	237	272	326	369	375	387	413	436	445
Other nonprofit institutions serving households	45	68	106	142	162	178	202	225	246	267	276
Government	2,152	2,382	2,639	2,951	3,392	3,916	4,353	4,732	5,066	5,263	5,497
Federal Government	1,668	1,823	1,988	2,177	2,476	2,853	3,153	3,382	3,556	3,610	3,736
State and local governments ¹	48	52	57	62	67	67	75	85	104	128	145
Universities and colleges	291	345	411	506	626	747	875	1,010	1,138	1,244	1,331
Federally funded R&D centers											
Universities and colleges	146	161	183	207	224	248	250	255	269	282	286

	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980
Total R&D investment	26,627	27,460	29,404	31,738	34,330	36,757	40,523	44,432	49,694	56,878	65,461
Private	20,682	20,984	22,345	24,228	26,255	27,997	31,201	34,439	38,739	44,750	51,852
Business	17,844	18,082	19,268	21,043	22,732	24,090	26,801	29,534	32,993	38,208	44,451
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	662	702	755	786	860	948	1,063	1,180	1,395	1,588	1,822
Federally funded R&D centers											
Business	487	507	572	567	677	761	930	1,005	1,128	1,214	1,333
Universities and colleges	449	452	478	515	557	632	725	859	1,046	1,200	1,355
Other nonprofit institutions serving households	261	240	227	218	241	253	267	298	352	418	515
Government	5,945	6,476	7,058	7,510	8,075	8,760	9,322	9,993	10,954	12,128	13,609
Federal Government	4,053	4,430	4,831	5,084	5,405	5,777	6,037	6,271	6,706	7,292	8,106
State and local governments ¹	162	189	223	251	266	284	301	312	340	387	428
Universities and colleges	1,445	1,573	1,708	1,859	2,053	2,289	2,491	2,792	3,180	3,613	4,108
Federally funded R&D centers											
Universities and colleges	286	284	296	317	352	411	493	618	729	836	967

	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991
Total R&D investment	74,798	82,924	91,680	103,948	116,262	122,744	127,619	135,602	143,924	154,233	163,575
Private	59,929	67,048	74,310	84,687	94,849	99,225	103,325	109,567	115,849	124,540	133,034
Business	51,843	58,534	65,097	74,529	83,607	87,060	90,215	94,955	99,929	107,470	114,739
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
Other nonprofit institutions serving households	2,046	2,186	2,415	2,730	3,090	3,433	3,658	4,297	4,916	5,380	6,072
Federally funded R&D centers											
Business	1,450	1,555	1,650	1,800	1,919	1,940	2,046	2,176	2,251	2,385	2,341
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
Other nonprofit institutions serving households	576	570	627	651	698	616	578	610	674	801	900
Government	14,869	15,875	17,370	19,261	21,414	23,520	24,293	26,035	28,075	29,694	30,542
Federal Government	8,795	9,333	10,256	11,390	12,604	13,688	13,510	14,190	15,109	15,675	15,566
State and local governments ¹	461	482	491	483	497	538	559	604	641	629	597
Universities and colleges	4,528	4,876	5,291	5,842	6,586	7,416	8,251	9,188	10,191	11,167	12,060
Federally funded R&D centers											
Universities and colleges	1,085	1,185	1,331	1,547	1,726	1,878	1,973	2,054	2,133	2,223	2,319

	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
Total R&D investment	167,786	168,051	171,635	185,086	198,769	213,827	227,725	245,878	268,559	275,294	276,533
Private	136,135	135,078	137,755	150,753	163,847	177,485	190,012	206,646	227,394	229,839	226,294
Business	116,795	115,483	117,444	129,878	142,389	155,418	167,065	182,011	199,886	199,815	193,677
Universities and colleges	6,503	6,815	7,113	7,380	7,744	8,192	8,658	9,246	10,012	10,969	12,099
Other nonprofit institutions serving households	6,514	6,779	6,806	6,869	7,065	7,349	8,011	8,774	10,389	11,557	12,474
Federally funded R&D centers											
Business	2,415	2,017	2,261	2,338	2,362	2,186	2,131	2,001	2,010	2,072	2,316
Universities and colleges	2,942	2,967	3,041	3,087	3,064	3,099	3,004	2,986	3,044	3,235	3,409
Other nonprofit institutions serving households	965	1,017	1,090	1,201	1,223	1,241	1,143	1,628	2,053	2,192	2,319
Government	31,652	32,972	33,880	34,333	34,922	36,342	37,713	39,232	41,165	45,455	50,239
Federal Government	15,867	16,405	16,599	16,318	16,159	16,570	16,566	16,481	16,450	18,249	19,922
State and local governments ¹	566	588	596	547	506	519	583	611	609	680	769
Universities and colleges	12,864	13,632	14,375	15,142	15,868	16,799	17,916	19,407	21,298	23,413	25,838
Federally funded R&D centers											
Universities and colleges	2,354	2,348	2,310	2,326	2,389	2,455	2,649	2,733	2,808	3,113	3,710

1. Excludes universities and colleges.

Table 3.2. Real Investment in R&D Assets by Performer, 1959–2002

[Millions of chained (2000) dollars]

	1959	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969
Total R&D investment	19,409	21,224	22,509	23,972	27,174	29,844	31,749	34,247	35,446	36,558	37,446
Private	16,087	17,566	18,447	19,455	21,901	23,724	24,965	26,987	27,877	28,895	29,615
Business.....	14,329	15,526	16,013	16,953	19,071	20,502	21,619	23,490	24,043	25,010	25,708
Universities and colleges.....	441	532	625	715	822	945	1,079	1,203	1,304	1,355	1,359
Other nonprofit institutions serving households.....	275	319	394	476	584	674	773	798	905	888	843
Federally funded R&D centers											
Business.....	675	764	887	676	666	748	596	558	640	617	677
Universities and colleges	297	320	365	417	506	577	584	593	617	635	635
Other nonprofit institutions serving households.....	70	105	163	218	251	279	315	345	368	389	393
Government	3,322	3,658	4,062	4,517	5,273	6,120	6,783	7,261	7,568	7,663	7,831
Federal Government	2,574	2,801	3,060	3,332	3,848	4,459	4,913	5,190	5,312	5,256	5,322
State and local governments ¹	74	80	88	94	104	105	116	131	155	186	206
Universities and colleges.....	449	530	632	774	973	1,168	1,364	1,549	1,700	1,811	1,895
Federally funded R&D centers											
Universities and colleges	225	248	282	317	348	387	390	390	402	410	407

	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980
Total R&D investment	36,008	35,844	37,862	40,088	41,528	40,811	42,011	43,974	48,227	53,519	59,495
Private	27,969	27,391	28,773	30,602	31,759	31,084	32,347	34,084	37,596	42,107	47,126
Business.....	24,131	23,604	24,810	26,579	27,498	26,747	27,785	29,230	32,019	35,952	40,399
Universities and colleges.....	1,324	1,307	1,347	1,388	1,437	1,458	1,467	1,547	1,772	1,997	2,160
Other nonprofit institutions serving households.....	895	916	972	993	1,040	1,053	1,102	1,168	1,354	1,494	1,656
Federally funded R&D centers											
Business.....	659	661	737	717	819	845	964	995	1,095	1,142	1,212
Universities and colleges	608	590	615	650	674	702	751	850	1,015	1,129	1,231
Other nonprofit institutions serving households.....	353	313	292	275	291	281	277	295	341	394	468
Government	8,039	8,453	9,089	9,486	9,769	9,727	9,664	9,890	10,631	11,412	12,369
Federal Government	5,480	5,783	6,221	6,421	6,538	6,414	6,258	6,206	6,508	6,861	7,367
State and local governments ¹	219	246	287	317	322	315	313	308	330	364	389
Universities and colleges.....	1,954	2,053	2,200	2,348	2,483	2,541	2,583	2,764	3,086	3,400	3,733
Federally funded R&D centers											
Universities and colleges	386	371	382	400	425	456	511	612	707	786	879

	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991
Total R&D investment	64,962	67,722	74,035	84,296	95,657	101,469	106,655	113,115	118,375	123,975	126,619
Private	52,048	54,757	60,008	68,676	78,039	82,026	86,352	91,397	95,284	100,107	102,977
Business.....	45,025	47,803	52,568	60,438	68,790	71,970	75,396	79,208	82,190	86,386	88,816
Universities and colleges.....	2,257	2,262	2,387	2,631	2,969	3,327	3,729	4,132	4,440	4,624	4,747
Other nonprofit institutions serving households.....	1,777	1,785	1,950	2,214	2,542	2,838	3,057	3,584	4,043	4,325	4,700
Federally funded R&D centers											
Business.....	1,260	1,270	1,333	1,460	1,579	1,603	1,710	1,815	1,851	1,917	1,812
Universities and colleges	1,229	1,171	1,264	1,405	1,585	1,778	1,977	2,149	2,205	2,211	2,206
Other nonprofit institutions serving households.....	500	465	506	528	574	510	483	509	554	644	697
Government	12,914	12,965	14,027	15,620	17,618	19,443	20,303	21,717	23,091	23,868	23,641
Federal Government	7,639	7,622	8,282	9,237	10,370	11,315	11,290	11,836	12,427	12,600	12,049
State and local governments ¹	400	393	396	391	409	445	467	504	527	505	462
Universities and colleges.....	3,932	3,982	4,273	4,737	5,419	6,131	6,896	7,664	8,382	8,976	9,335
Federally funded R&D centers											
Universities and colleges	943	967	1,075	1,254	1,420	1,552	1,649	1,713	1,754	1,787	1,795

	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
Total R&D investment	128,330	129,120	132,713	149,408	165,738	184,926	213,125	239,359	268,559	285,661	288,335
Private	104,122	103,786	106,516	121,693	136,619	153,495	177,830	201,167	227,394	238,494	235,952
Business.....	89,330	88,730	90,811	104,842	118,727	134,411	156,354	177,185	199,886	207,340	201,943
Universities and colleges.....	4,974	5,236	5,500	5,958	6,457	7,085	8,103	9,001	10,012	11,382	12,615
Other nonprofit institutions serving households.....	4,982	5,209	5,263	5,545	5,891	6,356	7,497	8,541	10,389	11,992	13,006
Federally funded R&D centers											
Business.....	1,847	1,550	1,748	1,887	1,969	1,890	1,994	1,948	2,010	2,150	2,415
Universities and colleges	2,250	2,280	2,351	2,492	2,555	2,680	2,812	2,907	3,044	3,357	3,555
Other nonprofit institutions serving households.....	738	782	843	969	1,020	1,073	1,070	1,584	2,053	2,274	2,418
Government	24,209	25,334	26,197	27,715	29,118	31,430	35,295	38,192	41,165	47,167	52,383
Federal Government	12,136	12,604	12,835	13,172	13,474	14,330	15,504	16,044	16,450	18,936	20,773
State and local governments ¹	433	452	461	442	422	448	545	594	609	706	802
Universities and colleges.....	9,839	10,474	11,115	12,223	13,231	14,528	16,767	18,893	21,298	24,295	26,941
Federally funded R&D centers											
Universities and colleges	1,800	1,804	1,786	1,877	1,992	2,123	2,479	2,661	2,808	3,231	3,868

1. Excludes universities and colleges.

NOTE: Implemented using assumptions defined in scenario D.

Table 4.1 Aggregate Input Price Indexes for R&D Investment, 1959–2002

[Index numbers, 2000=100]

	1959	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969
Total funder R&D investment	18.4	18.4	18.8	19.1	19.5	20.0	20.6	21.3	22.1	23.1	24.4
Federal extramural	24.2	24.6	25.0	26.2	24.8	25.5	26.1	26.4	27.7	28.9	30.6
Federal intramural	12.0	11.2	12.2	12.2	13.4	14.4	15.5	16.4	17.3	18.5	19.8
Non-federal domestic	17.2	17.3	17.4	16.9	19.1	19.0	19.3	20.6	20.7	21.7	22.7
Total performer R&D investment	18.4	18.4	18.8	19.1	19.5	20.0	20.6	21.3	22.1	23.1	24.4
Private	20.4	20.6	20.9	21.2	21.4	21.8	22.2	22.8	23.6	24.6	25.8
Business	20.9	21.2	21.5	21.8	22.1	22.4	22.8	23.4	24.1	25.2	26.4
Universities and colleges	13.1	13.3	13.7	14.2	14.7	15.2	15.8	16.7	17.6	18.7	19.8
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	19.2	19.0	18.9	19.6	18.5	19.1	19.7	20.6	21.6	22.6	24.2
Universities and colleges	24.6	24.2	24.0	24.8	23.5	24.2	24.8	25.6	26.7	27.9	29.5
Other nonprofit institutions serving households	24.5	25.1	25.7	27.0	25.6	26.3	26.7	26.8	28.1	29.3	31.0
Public	12.4	11.8	12.6	12.7	13.6	14.5	15.4	16.3	17.1	18.2	19.5
Federal Government	12.0	11.2	12.2	12.2	13.4	14.4	15.5	16.4	17.3	18.5	19.8
State and local governments ¹	16.6	16.7	16.7	16.9	17.2	17.6	18.0	18.7	19.3	20.1	20.8
Universities and colleges	13.0	13.2	13.5	13.9	14.3	14.8	15.3	16.1	16.9	17.9	19.0
Federally funded R&D centers											
Universities and colleges	19.5	19.0	18.8	19.2	18.5	19.0	19.6	20.4	21.4	22.5	24.1

	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980
Total funder R&D investment	25.8	27.3	28.8	30.4	33.2	36.4	38.6	41.2	44.0	47.6	52.2
Federal extramural	32.1	34.0	36.7	38.5	41.6	45.6	47.7	50.4	53.4	57.0	62.0
Federal intramural	21.6	23.8	26.1	27.8	29.8	33.0	35.3	38.5	40.7	43.6	47.9
Non-federal domestic	23.9	25.0	25.2	26.9	29.7	32.4	34.6	37.0	39.9	43.8	48.1
Total performer R&D investment	25.8	27.3	28.8	30.4	33.2	36.4	38.6	41.2	44.0	47.6	52.2
Private	27.2	28.5	29.8	31.5	34.4	37.6	39.8	42.3	45.3	49.0	53.6
Business	27.8	29.2	30.4	32.1	35.0	38.2	40.5	43.0	46.0	49.9	54.4
Universities and colleges	21.0	22.0	22.9	24.3	26.6	28.8	30.5	32.5	34.8	38.0	42.0
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	25.7	27.2	29.2	31.2	34.4	38.8	41.1	44.2	47.2	51.0	56.2
Universities and colleges	31.2	32.9	35.1	37.0	40.4	44.7	46.8	49.4	52.1	56.0	60.8
Other nonprofit institutions serving households	32.6	34.5	37.3	39.2	42.6	46.6	48.8	51.3	54.0	57.9	62.8
Public	21.1	22.9	24.8	26.4	28.6	31.5	33.6	36.4	38.8	41.9	46.2
Federal Government	21.6	23.8	26.1	27.8	29.8	33.0	35.3	38.5	40.7	43.6	47.9
State and local governments ¹	21.5	22.3	23.0	24.3	27.9	30.6	32.7	34.9	37.5	41.3	46.6
Universities and colleges	20.2	21.5	22.5	24.0	26.4	28.7	30.4	32.4	34.9	38.3	42.4
Federally funded R&D centers											
Universities and colleges	25.6	27.1	28.9	31.0	34.2	38.6	40.7	43.9	47.2	51.1	56.5

	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991
Total funder R&D investment	57.0	60.5	62.9	65.3	67.4	69.1	71.9	74.5	77.6	80.2	82.6
Federal extramural	66.6	71.1	74.2	76.7	78.4	80.1	80.9	81.0	82.9	85.0	86.7
Federal intramural	52.2	55.5	57.8	59.8	61.7	63.8	65.9	68.7	70.7	74.1	77.4
Non-federal domestic	53.2	56.3	58.4	60.8	63.0	64.6	68.5	72.4	76.3	79.0	81.6
Total performer R&D investment	57.0	60.5	62.9	65.3	67.4	69.1	71.9	74.5	77.6	80.2	82.6
Private	58.6	62.1	64.6	67.0	69.1	70.7	73.6	76.3	79.4	81.9	84.2
Business	59.5	63.1	65.6	68.0	70.1	71.6	74.7	77.4	80.6	83.0	85.2
Universities and colleges	45.7	48.7	50.8	53.4	55.9	58.1	61.2	64.0	67.4	70.6	72.8
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
Federally funded R&D centers											
Business	61.4	66.0	68.7	71.0	73.5	75.2	75.9	77.5	80.1	82.5	84.6
Universities and colleges	65.3	69.4	72.0	74.7	76.8	78.5	79.3	81.6	83.1	85.4	87.1
Other nonprofit institutions serving households	67.2	71.0	73.7	76.6	78.4	80.2	81.0	80.6	82.8	84.9	86.4
Public	50.3	53.5	55.7	57.9	60.0	62.1	64.5	67.1	69.6	72.8	75.6
Federal Government	52.2	55.5	57.8	59.8	61.7	63.8	65.9	68.7	70.7	74.1	77.4
State and local governments ¹	51.6	54.1	55.8	57.9	59.2	61.0	63.5	66.8	69.3	71.9	75.1
Universities and colleges	46.1	49.0	51.1	53.7	56.2	58.5	61.6	64.1	67.3	70.4	72.6
Federally funded R&D centers											
Universities and colleges	62.0	66.3	69.0	71.4	74.0	75.8	77.0	78.9	81.6	84.0	86.0

	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
Total funder R&D investment	84.9	87.0	88.8	90.1	91.9	93.8	95.1	96.8	100.0	102.6	106.3
Federal extramural	88.9	90.1	91.5	92.7	93.4	95.3	96.6	97.7	100.0	101.9	103.9
Federal intramural	79.3	82.1	85.0	88.2	90.6	92.7	94.4	96.9	100.0	102.6	106.5
Non-federal domestic	84.1	86.5	88.2	89.4	91.6	93.4	94.7	96.5	100.0	102.8	107.2
Total performer R&D investment	84.9	87.0	88.8	90.1	91.9	93.8	95.1	96.8	100.0	102.6	106.3
Private	86.6	88.6	90.1	91.1	92.7	94.4	95.6	96.9	100.0	102.4	106.2
Business	87.8	89.8	91.2	91.8	93.3	95.0	96.1	97.1	100.0	102.4	106.4
Universities and colleges	75.0	77.1	79.5	82.1	85.0	87.6	90.2	95.0	100.0	104.2	108.1
Other nonprofit institutions serving households	77.4	78.9	80.5	84.1	86.7	89.3	92.0	94.5	100.0	101.6	102.9
Federally funded R&D centers											
Business	87.0	88.3	90.0	92.7	93.7	95.4	96.4	97.3	100.0	102.4	104.9
Universities and colleges	89.6	90.6	92.3	93.8	94.4	96.0	97.0	97.7	100.0	101.7	103.6
Other nonprofit institutions serving households	88.9	90.0	91.7	92.9	93.5	95.5	96.7	97.6	100.0	101.9	104.0
Public	77.5	80.0	82.6	85.5	88.1	90.4	92.5	96.0	100.0	103.3	107.0
Federal Government	79.3	82.1	85.0	88.2	90.6	92.7	94.4	96.9	100.0	102.6	106.5
State and local governments ¹	77.4	78.9	80.5	84.1	86.7	89.3	92.0	94.5	100.0	101.6	102.9
Universities and colleges	74.7	77.0	79.5	82.1	85.1	87.6	90.3	95.0	100.0	104.2	107.9
Federally funded R&D centers											
Universities and colleges	88.2	89.5	91.2	94.2	95.3	96.6	97.2	97.6	100.0	101.9	104.0

1. Excludes universities and colleges.

Table 4.2 Alternative Scenario Price Indexes for R&D Investment, 1959–2002

[Index numbers, 2000=100]

	1959	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969
Scenario A.....	18.4	18.4	18.8	19.1	19.5	20.0	20.6	21.3	22.1	23.1	24.4
Scenario B.....	94.5	92.3	91.0	87.9	86.5	85.4	84.1	85.9	86.6	86.1	87.7
Scenario C.....	43.6	43.6	45.2	44.6	45.3	45.8	46.4	47.0	48.0	48.5	47.7
Scenario D.....	64.8	65.1	65.0	65.3	64.3	64.0	64.2	65.2	66.9	68.7	70.2

	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980
Scenario A.....	25.8	27.3	28.8	30.4	33.2	36.4	38.6	41.2	44.0	47.6	52.2
Scenario B.....	90.3	90.8	90.7	92.1	101.1	105.8	107.6	110.1	114.6	122.2	130.3
Scenario C.....	48.3	52.2	54.4	55.4	57.6	62.5	67.1	70.3	72.0	72.0	75.3
Scenario D.....	73.9	76.6	77.7	79.2	82.7	90.1	96.5	101.0	103.0	106.3	110.0

	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991
Scenario A.....	57.0	60.5	62.9	65.3	67.4	69.1	71.9	74.5	77.6	80.2	82.6
Scenario B.....	138.1	139.0	137.9	135.7	134.2	132.1	129.3	128.9	132.2	134.4	136.5
Scenario C.....	80.8	87.2	92.0	97.2	104.9	110.4	107.2	108.4	108.4	108.7	110.8
Scenario D.....	115.1	122.4	123.8	123.3	121.5	121.0	119.7	119.9	121.6	124.4	129.2

	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
Scenario A.....	84.9	87.0	88.8	90.1	91.9	93.8	95.1	96.8	100.0	102.6	106.3
Scenario B.....	134.2	132.9	128.4	123.8	121.0	115.4	111.4	105.8	100.0	100.0	99.4
Scenario C.....	112.8	115.1	114.2	115.2	115.2	116.1	111.6	105.8	100.0	96.3	93.2
Scenario D.....	130.7	130.2	129.3	123.9	119.9	115.6	106.9	102.7	100.0	96.4	95.9

NOTES. Scenario A uses an input price index.

Scenario B uses a multifactor productivity-adjusted price index.

Scenario C uses a high-productivity service industries price index.

Scenario D uses a top four R&D performers price index.

The price index for scenario A corresponds to the total price indexes for funders and performers in table 4.1.