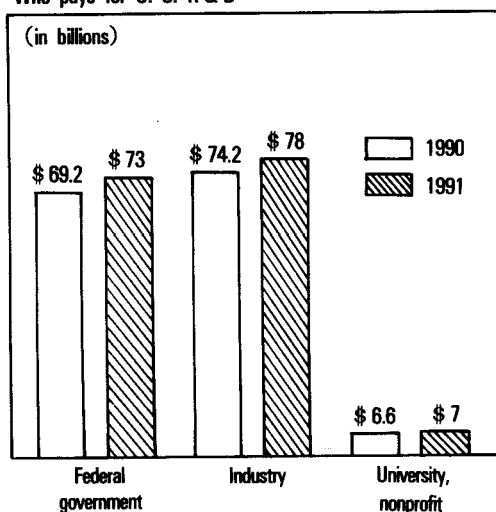


미국의 R & D 투자 현황

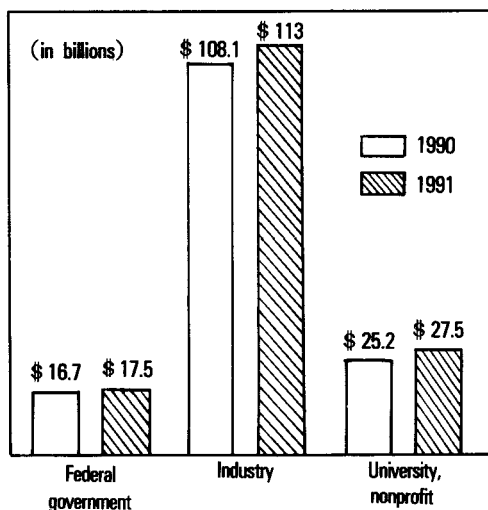
U. S. R & D to Reach \$ 158 Billion in 1991

Who pays for U. S. R & D



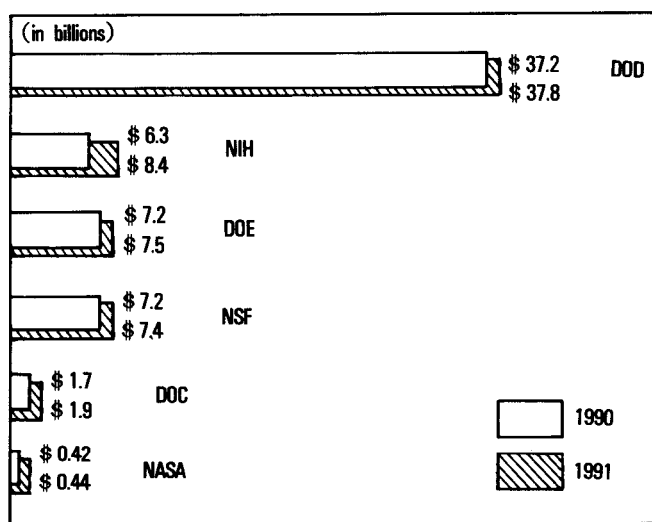
Research funding sources will increase their monies in 1991, but will monitor the economy throughout the year and make adjustments down each month or quarter if necessary.

Who does the work



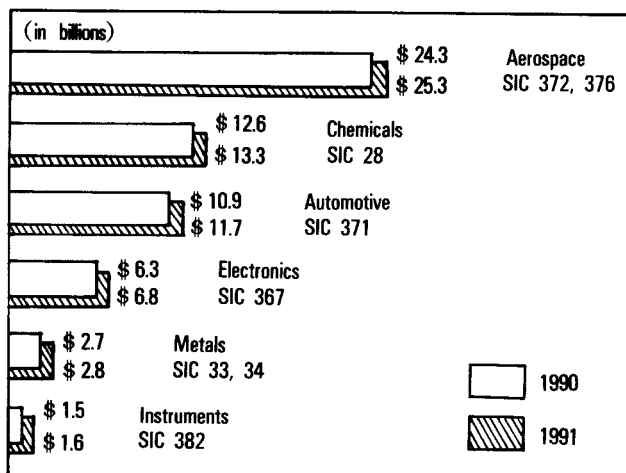
University research centers will increase their share of the total research workload, but they will see smaller growth (9.1%) than in the past two years (10.4% average growth).

Defense Still Dominates Federal R & D



Defense research continues to have the largest share of the federal budget, but its share will drop two percentage points in 1991, to 51.8%. Additional defense share decreases are forecast for the future as overall defense spending decreases and the research balance shifts to a more commercial-based emphasis.

Slow Growth of R & D in Key Industries



Industrial research in 1991 will have smaller increases than in 1990, often several percentage points lower and sometimes not matching inflation increases, such as those in aerospace (4.1% increase) and metals industries (3.7% increase).

NSF's Budget for Chemical Programs is up 11%

\$ Millions	1992 ^a	1991 ^a	1990 ^b	% change 1991-92
Materials Research	\$ 136.6	\$ 122.5	\$ 117.0	11 %
Project support	80.2	69.6	66.2	15
Laboratories and groups	37.8	35.8	34.6	6
Facilities, instrumentation	18.6	17.1	16.2	9
Chemistry	111.9	102.1	97.8	10
Physical	33.0	30.1	29.0	10
Organic and macromolecular	27.7	25.3	24.5	9
Inorganic, bioinorganic, and organometallic	19.6	17.3	16.2	13
Analytical and surface	15.4	13.7	12.9	12
Instrumentation	8.1	8.1	8.1	0
Special projects	8.1	7.6	7.1	7
Chemical and Thermal Systems Engineering	38.2	33.0	30.8	16
Interfacial, transport, and separations process	9.9	8.7	7.5	14
Fluid, particulate, and hydraulic systems	9.8	9.2	9.0	6
Chemical reaction processes	9.4	7.0	6.9	34
Thermal systems	9.1	8.1	7.4	12
Biochemistry	16.1	14.6	14.3	10
Cellular Biochemistry	14.9	13.1	12.3	14
TOTAL	\$ 317.7	\$ 285.3	\$ 272.2	11 %

Note : Obligations. a Estimate. b Actual. Source : National Science Foundation

Top 10 Schools For R&D Spending

	(in millions)
Johns Hopkins Univ.	\$ 648
Massachusetts Institute of Technology	\$ 287
Cornell Univ.	\$ 287
Stanford Univ.	\$ 286
Univ. of Wisconsin, Madison	\$ 286
Univ. of Michigan	\$ 281
Univ. of Minnesota	\$ 259
Texas A&M Univ.	\$ 251
Univ. of California, Los Angeles	\$ 228
Univ. of Washington	\$ 222

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