Science Resources Studies Division

DATA BRIEF

Directorate for Social, Behavioral and Economic Sciences

National Science Foundation

Vol. 1995, No. 13, October 18, 1995

U.S. R&D Spending Will Not Pick Up in '95

by John E. Jankowski, Jr.

Inflation-adjusted decline in U.S. R&D spending reflects worldwide pattern of constrained R&D support.

Total expenditures for research and development (R&D) performed in the United States are expected to reach $171 billion in 1995, 1 percent more than the revised total for 1994 ($169 billion). After adjusting for expected inflation, however, this 1995 figure represents a 2-percent decrease in spending. As a proportion of gross domestic product (GDP), R&D will account for an estimated 2.4-percent share in 1995, slightly lower than that estimated for 1994 (2.5 percent). Approximately 17 percent of the Nation's 1995 R&D total is to be expended on basic research activities, 23 percent on applied research, and 60 percent on development. These and other R&D statistics are taken from the *National Patterns of R&D Resources* series and are analyzed in the forthcoming report, *Science & Engineering Indicators—1995*.

1995 R&D Funding Patterns

Industry and the Federal Government provide, by far, the lion's share of the Nation's R&D support. In 1995, industry will account for an estimated 59 percent ($102 billion) of total, most of which ($99.3 billion) is used to finance R&D performed in-house or under contract to other firms. The remaining $2.4 billion goes to support research activities undertaken at universities and nonprofit organizations (table 1).

The Federal Government is expected to account for 36 percent ($61 billion) of the U.S. 1995 R&D expenditure total. This Federal total includes funds spent in intramural labs and Federally Funded Research and Development Centers (FFRDCs) ($25 billion), industry ($20 billion), and universities and colleges ($13 billion). Overall, industry support is expected to increase 2 percent in 1995 and Federal support to decline by 1 percent. In constant-dollar terms, both industrial and Federal support are expected to decline, by 1 percent and 3 percent, respectively. State Governments, universities and colleges, and other nonprofit organizations account for the remaining 5 percent ($9 billion) of the U.S. 1995 R&D funding total. Their combined support is estimated to increase 3 percent in 1995 and would remain flat after adjusting for expected inflation.

1995 R&D Performance Patterns

In terms of performance, industry accounts for 70 percent ($120 billion) of the Nation's estimated 1995 R&D effort, Federal labs—including all FFRDCs—for 14 percent ($25 billion), universities and colleges for 13 percent ($22 billion), and other nonprofit organizations for 3 percent ($5 billion). Academia is the only sector in which inflation-adjusted R&D performance is expected to increase in 1995, al-

Electronic Dissemination

SRS data—including this Data Brief and the most current 1995 National Patterns R&D tables—are available through the World Wide Web (http://www.nsf.gov/sbe/srs/stats.htm). For a summary of historical R&D trends, see the report *National Patterns of R&D Resources: 1994*, also available through the Web. To obtain SRS data through STIS, NSF's online Science and Technology Information System, see NSF flyer 95-64, "Getting NSF Information and Publications." For a paper copy of the flyer, call 703-306-1130. For an electronic copy of the STIS User's Guide, send an e-mail with the phrase "get NSF9410.TXT" to stisserv@nsf.gov. For NSF's Telephonic Device for the Deaf, dial 703-306-0090.

Table 1. National expenditures for research and development, by performing sector and source of funds: 1995

R&D performers	Total	Sources of R&D funds				Percent distribution, performers
		Industry	Federal Government	Universities and colleges[1]	Other nonprofit institutions	
	Millions of dollars					
Total	171,000	101,650	60,700	5,500	3,150	100.0%
Industry	119,600	99,300	20,300	—	—	69.9
Industry-administered FFRDCs	1,800	—	1,800	—	—	1.1
Federal Government	16,700	—	16,700	—	—	9.8
Universities and colleges	21,600	1,500	13,000	5,500	1,600	12.6
University-administered FFRDCs	5,300	—	5,300	—	—	3.1
Other nonprofit institutions	5,100	850	2,700	—	1,550	3.0
Nonprofit-administered FFRDCs	900	—	900	—	—	0.5
Percent distribution, sources	100.0%	59.4%	35.5%	3.2%	1.8%	

[1] Includes an estimated $1.6 billion in State and local government funds provided to university and college performers

KEY: FFRDC = Federally funded research and development center; "—" = Unknown but assumed to be negligible

SOURCE: NSF/SRS, *National Patterns of R&D Resources* , annual series

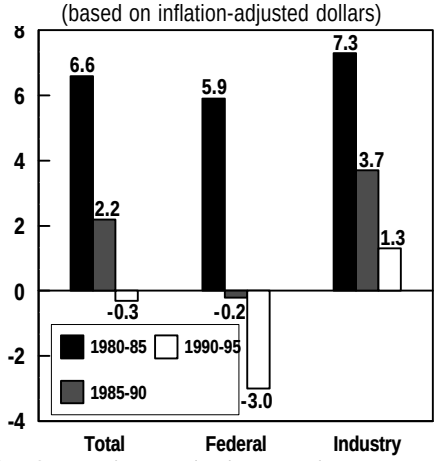
though by a mere 0.4 percent. Industry's R&D performance will decline 1 percent, as a result of slow growth in industry self-funding and reductions in Federal support to industry. R&D spending by Federal Government performers will decline an estimated 5 percent in real terms.

U.S. R&D Expenditure Trends

The estimated reductions in 1995 R&D expenditures in the United States represent a continuation in the patterns of R&D leveling and decline that have developed during the past decade. In the early 1980s R&D spending grew by almost 7 percent per year after adjustment for inflation. Strong funding support was provided both by industry and Federal agencies. Increases in R&D support tapered off substantially in the mid- to late-1980s, before turning negative in the early 1990s (chart 1). Most of the national decline in inflation-adjusted R&D support stems from reductions in Federal spending, but growth in industry R&D support also slackened considerably.

Chart 1. Rates of change in U.S. R&D support

(based on inflation-adjusted dollars)



SOURCE: NSF/SRS, *National Patterns of R&D Resources*, annual series

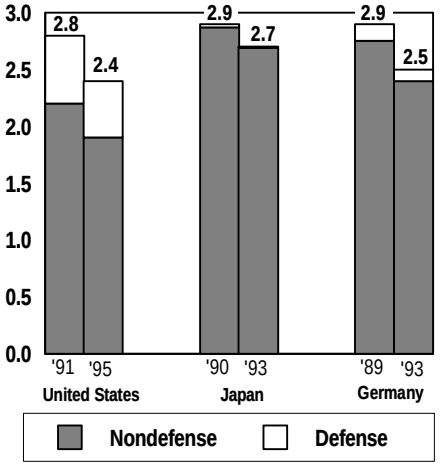
International R&D Spending

The slowdown in R&D spending has not been confined to the United States; R&D growth stagnated worldwide during the early 1990s. Notably, the dual effects of economic recession and general government budgetary constraint have adversely impacted R&D support in both Japan and Germany—the two largest R&D-performing countries following the United States. Although the timing and magnitude of changes within these three R&D-leading nations differ slightly, in each the R&D/GDP ratio has fallen from recent peaks to current lows (chart 2). The drop is most pronounced for the United States (2.4 percent, down from 2.8 percent) and Germany (2.5 percent, down from 2.9 percent) and reflects relative reductions in both defense and nondefense R&D. Even in Japan, however, R&D as a share of overall economic activity has been reduced somewhat, declining from a high of 2.9 percent in 1990 to 2.7 percent in 1993, the most recent year for which such international data are available.

User Notes

U.S. national R&D expenditures data were assembled from a number of NSF surveys. Estimates for 1995 are based on data provided by Federal R&D funding agencies, an independent survey of industrial R&D performers, and time series modeling techniques.

Chart 2. U.S., Japanese, and German R&D/GDP ratios: Selected years



NOTE: Years are chosen to display recent peaks and the latest data available.

SOURCE: NSF/SRS, *National Patterns of R&D Resources*, annual series, and Organisation for Economic Co-operation and Development Main Science and Technology Indicators database

Foreign R&D expenditure data are derived from national and international sources. For more information, contact—

John E. Jankowski, Jr.
Research and Development Statistics Program
Division of Science Resources Studies
National Science Foundation
4201 Wilson Boulevard, Suite 965
Arlington, VA 22230

phone: 703-306-1772 ext. 6930
Internet: jjankows@nsf.gov

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