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Defense and Economy Lead 7-percent Real R&D Growth in 1985

The nation's R&D performance is expected to reach an estimated \$109 billion in 1985, more than three times the current dollar level of 1975, the last year to show a real-dollar decrease in R&D spending. After discounting the effects of inflation, the 1985 R&D total shows a 65 percent real-dollar increase over R&D expenditures in 1975. Between 1975 and 1982 the nation increased its R&D funding at an average annual rate of 4.6 percent in constant dollars. Since 1982 this rate has been 6.5 percent, with the 1984-85 increase estimated at 7 percent.

R&D Support

The federal government is the source of about 47 percent of the national R&D total. Federal R&D spending is expected to exceed \$51 billion in 1985, nearly three times the 1975 level. In constant dollars the 1985 expenditures are about 50 percent greater than in 1975. Since 1982 federal R&D spending has increased at an annual average rate of 7.2 percent, compared to 2.9 percent for the previous seven years. Increased expenditures for defense-related R&D programs, as proposed by the president in the 1983, 1984, and 1985 budgets, is the major factor contributing to the sharp upturn in federal R&D spending in those years.

Nonfederal R&D support is estimated at nearly \$58 billion in 1985, 12 percent over the 1984 level. This figure represents real growth of 7 percent. Industry is expected to be the source of about 95 percent of the nonfederal total in 1985. Industrial support for R&D is estimated to increase in real terms by 7 percent over 1984. One explanation industry officials frequently give for the anticipated growth in 1985 R&D spending is a continuously optimistic view of the nation's economy. According to these same officials, efforts of U.S. industry to maintain and enhance its competitive position among high-technology firms throughout the major industrialized countries have driven the 6.2 percent average annual real growth in industry's R&D support since 1975.

R&D/GNP ratio

U.S. R&D expenditures are expected to reach 2.7 percent of GNP during 1985, up from 2.6 percent in 1984, and reflecting a constant-

dollar rate of increase in R&D funds almost 75 percent higher than that of GNP. This continues the gradual increase in the R&D/GNP ratio from the 1978 low of 2.2 percent. Real growth in GNP is estimated by the Office of Management and Budget at 4.3 percent in 1985, somewhat below the annual average of the last three years but 50 percent above the annual average of the preceding seven years (1975-82). By comparison, R&D expenditures in 1985 are expected to be 7-percent higher in constant dollars than 1984 from continued sharp rises in federal defense R&D spending, as well as of industry's strong support of R&D.

The research spectrum

In 1985 the nation is expected to invest \$13 billion in basic research, \$23 billion in applied research, and \$73 billion in development. These totals represent increases of 11 percent, 9 percent, and 14 percent, respectively, over 1984 levels. In real terms the corresponding increases are estimated at 6 percent, 4 percent, and 8 percent.

Federal proposals for defense spending (as shown in the 1985 budget) and U.S. industry's historically heavy emphasis on development

activities account primarily for the estimated increase of more than 8 percent in constant dollars in the nation's funding of development in 1985. This increase compares with an average annual increase of 4.7 percent between 1975 and 1982 and an average annual increase of nearly 8.5 percent between 1982 and 1985. About two-thirds of the nation's total R&D expenditures are generally devoted to development. U.S. industry has been both the major source of development funds (55 percent) and the major performer of development activities (about 85 percent).

The nation is expected to increase research (applied and basic combined) support by nearly 5 percent in constant dollars in 1985, which is consistent with the average annual increase during the previous ten years.

Nearly two-thirds of the total research effort is directed to applied research. Industry surpassed the federal government as the major source of applied research funds in 1980, and in 1985 it will account for 55 percent of national applied research funding. In real terms, industry applied research support has increased by about 50 percent since 1980; federal applied research support over the same period has remained level.

National R&D expenditures

