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Industry Investment in Research and Development Shows Upward Trend

According to preliminary findings from the latest NSF/Census survey, industry in the United States spent \$38 billion on research and development activities during 1979, 14 percent above the previous year's level.¹ This represents a 4.6 percent increase in constant dollars² and marks the fourth consecutive year of real growth in industrial R/D performance.

During 1979, outlays by industry for energy-related research and development rose dramatically—21 percent—to a total of \$3.7 billion. With increased energy self-sufficiency a major national priority, greater emphasis is being directed towards expanding supplies and improving energy efficiency. The reaction of industry to this objective is reflected in data that show the proportion of total R/D funds spent on energy-related projects rising from 3.8 percent in 1972 to nearly 10 percent in 1979.

Two-thirds of the research and development undertaken by corporations is internally financed, with support for the remaining portion provided by the federal government. Increases in both company and federal funds are contributing to the current upward trend in R/D expenditures, although the former grew at a faster rate than the federal share in each of the past five years. In 1979 company-financed research and development rose by 15 percent, whereas federal outlays increased 11 percent. In constant dollars the increases were 6 percent and 2 percent, respectively.

For the fourth consecutive year, the automotive industry led the other major R/D-performing industries in percentage increase in R/D expenditures by registering a 16 percent growth over last year's total. As in previous years, industry representatives attribute the rise in R/D activity

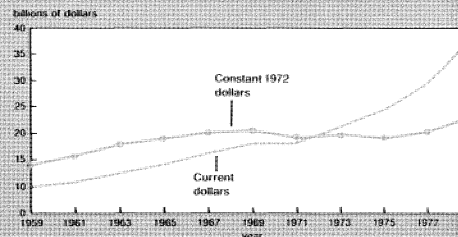
to the development of more fuel-efficient vehicles and devices to meet more stringent emission-control standards.

The aerospace industry, which spends more for research and development than any other industry, exhibited the smallest overall percentage increase (10 percent) in R/D expenditures between 1978 and 1979. The federal funds that support almost three-fourths of the research and development performed by this industry have shown no real growth during the past two years. Aerospace companies' own funds, by contrast, increased 23 percent (13 percent in constant dollars), the largest percentage gain in company-financed research and development reported in 1979 by any of the five leading industries. These additional outlays largely reflect efforts currently under way to develop supercapacity commercial airliners.

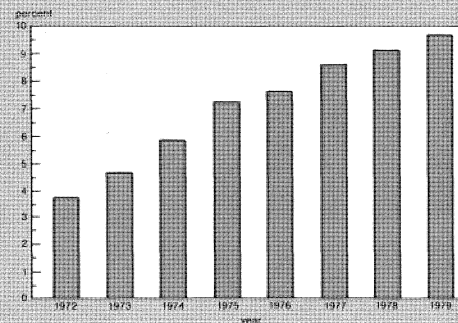
Ten years ago the machinery industry ranked fourth in total company R/D outlays. Between 1969 and 1979, however, the internally financed R/D expenditures of this industry outpaced the other major R/D-performing industries; it is now leading in total company R/D performance. The office-, computing-, and accounting-machine component of this industry is responsible for most of the gain. Rapidly advancing technology, escalating demand, and fierce competition are inducing manufacturers to allocate greater resources toward the development of increasingly more sophisticated computers and computer software, including data- and word-processing equipment.

Industry employed a record 450,600 R/D scientists and engineers in January 1980. The total number of these professionals has been climbing steadily since 1976 at an average annual rate of 5.5 percent. This series of increases is the largest since the survey began, and follows periods of actual decline and little growth in the employment of R/D scientists and engineers that occurred during the early and mid seventies.

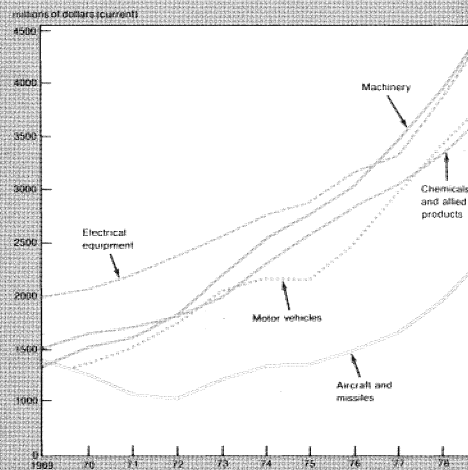
Industrial R&D expenditures



Industrial energy R&D expenditures as a percent of total R&D expenditures



Company funds for research and development by the five leading industries



Source: National Science Foundation

¹The data are based on information from the 200 largest R/D-performing companies reporting in the 1979 Survey of Industrial Research and Development.

²The gross national product (GNP) deflator was used to convert from current to constant dollars.