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National R&D Spending Continues to Show Real Growth in 1979

Total R&D spending in the United States is expected to reach \$51.6 billion in 1979, an increase of 9 percent over the 1978 level and double the amount spent on research and development a decade earlier. Although knowledge is limited regarding the relationship between research and development and economic growth and productivity, it is generally accepted that the relationship is positive and significant. It should be of national concern, therefore, that the doubling of the nation's R&D expenditures since 1969 has been almost entirely attributable to inflation. However, an average annual rate of 3.5 percent in real growth has been experienced in the overall U.S. R&D effort each year since 1975. This growth has resulted in large part from increased emphasis on finding alternative sources of energy and is not seen as providing a major stimulus to economic growth or productivity in the short term.

The Federal Government is expected to furnish \$25.7 billion for research and development in 1979, 8 percent more than in 1978. These funds will account for one-half of the nation's overall R&D effort in each year.

Over the last decade, the Federal Government has increased its emphasis on civilian programs relative to that for defense and space. For 1978 and 1979 the largest Federal R&D spending increases are expected to be in the energy and health areas. Within the civilian area, beginning in 1979, greater emphasis is planned for research of a long-term nature, in contrast to earlier years in which such emphasis was placed on large-scale demonstration projects.

National R&D expenditures are expected to account for 2.2 percent of the gross national product (GNP) in 1979, the same as in 1978. This ratio has been declining steadily each year from its 1964 high of 3.0 percent, primarily as a result of the slowdown in Federal R&D spending through the mid-seventies. With the expected increases in the Federal R&D effort into the eighties, this ratio should remain at about its present level into the near future.

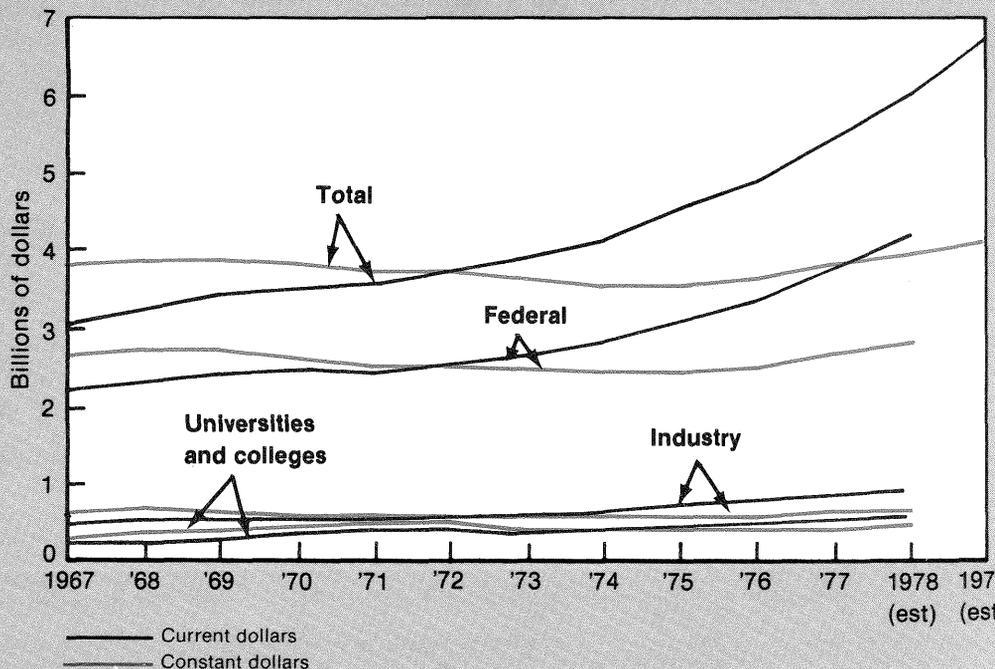
In 1979, national basic research spending is expected to reach \$6.7 billion, 11 percent above the 1978 level of \$6.0 billion. During the seventies, there has been a general trend of allocating proportionately less of the national R&D effort each year to basic research. The following are the three main factors behind this trend:

- The Federal Government deemphasized basic research within its defense and space programs during the early to mid-seventies. However, recent administrations have adopted a policy of strengthening basic research.
- Throughout the seventies, the industrial sector has been increasingly emphasizing shorter term payoffs from its R&D effort.

This has resulted in industry devoting more of its research effort to projects with a special product or process in mind over projects with no specific commercial application. This trend is expected to continue.

- Universities have devoted most of their non-Federal R&D funds to basic research. Since 1970, however, they have increasingly been emphasizing applied research work with these funds. Since a large portion of these non-Federal funds represent cost-sharing activities on Federal grants, the recent Federal emphasis on basic research should result in a reversal of this applied research trend, starting in 1978.

National basic research expenditures by source: 1967-1979



SOURCE: National Science Foundation