

INTRODUCTION

Research and development (R&D) is widely recognized as being vital to economic growth and social welfare, often resulting in benefits unimagined at the time it is initiated. The resources that various organizations devote to R&D and the ends to which they devote them influence both economic growth and international competitiveness. For this reason, the United States and many other nations collect extensive R&D expenditure data for study by analysts in a variety of fields.

Although often used as a proxy for the direction and rate of technological change, R&D expenditure data more directly measure the level of economic purchasing power devoted to R&D projects in lieu of other economic activities. Industrial (private sector) funding of R&D, for example, may be considered an indicator of how important R&D is to companies because companies could just as well devote those same funds to other business activities such as advertising. Similarly, government support for R&D reflects governmental and societal commitment to scientific and technological advancement, an objective that must compete for dollars against other

functions supported by discretionary government spending. The same basic idea is true for the other sectors that fund R&D: universities, colleges, and other nonprofit organizations. In effect, R&D expenditures measure the perceived economic importance of R&D relative to all other economic activities.

Information about R&D's perceived relative value is extremely useful for economic decisionmaking. For example, an increase in R&D in a particular field of study may reflect an increase in demand for scientists and engineers to study and work in that field. An increase in R&D in a particular industrial sector could be among the first signs that the sector is about to expand with new lines of products or services. Of course, R&D data alone would not be enough to analyze accurately the future growth of a field of study or an industrial sector, but it may well be an important input into any such analysis. The National Science Foundation (NSF) publishes the R&D data in this report to facilitate useful analyses of the nation's economic and social conditions that ultimately lead to better-informed decisionmaking.