

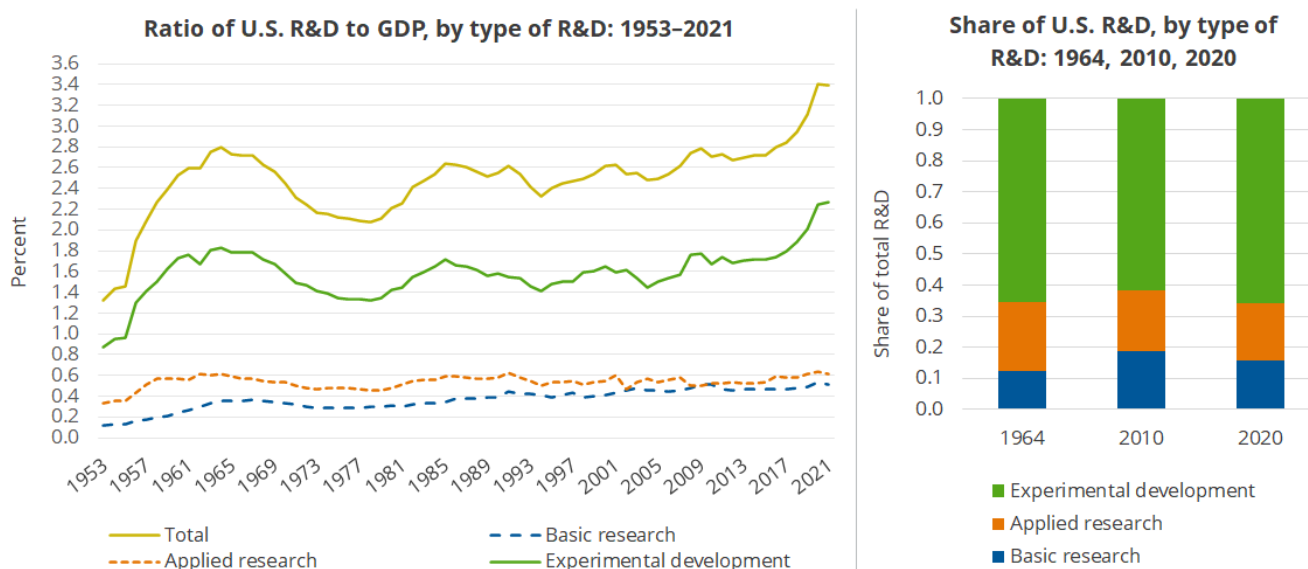


InfoChart

Recent Increase in R&D to GDP Ratio Driven by Increases in Experimental Development

NSF 23-340 | June 2023 | Gary Anderson and Francisco Moris

Figure 1 | U.S. R&D, by type of R&D



GDP = gross domestic product.

Note(s): Some data for 2020 are preliminary and may be revised. The data for 2021 include estimates and are likely to later be revised. The GDP data used reflect the Bureau of Economic statistics of late October 2021.

Source(s): National Center for Science and Engineering Statistics, National Patterns of R&D Resources (annual series).

The ratio of U.S. research and development (R&D) to gross domestic product (GDP), at 3.40% in 2021, exceeded 3% for the first time in 2019. The previous peak of the R&D-to-GDP ratio was in 1964. Focusing on the long-term trends masks changes over the past decade that have driven R&D to account for over 3% of the value of domestically produced goods and services. In 1964, experimental development accounted for 65% of domestic R&D expenditures, which is comparable to the 66% seen in 2020. Basic research increased from 13% to 16% of domestic R&D from 1964 to 2020. However, from 2010 to 2020, as the share of R&D in GDP rose from 2.70% to 3.40%, experimental development increased its share of GDP from 1.67% to 2.24%. At the same time, experimental development increased its share of domestic R&D performance from 62% to 66%. Over the same period, the performance of basic research has maintained a stable share of GDP (0.51% and 0.53% of GDP for 2010 and 2020, respectively) and the 2020 basic research share of domestic R&D (16%) is lower than the 2010 value (19%). Similarly, in 2010 and 2020, applied research maintained a relatively stable share of GDP (0.53% and 0.63%) and total R&D performance (19% for 2010 and 2020).

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