

US is focused on developing advanced technologies as its conflict with China escalates

SAI YABUKI
ECONOMIC RESEARCH OFFICE

MUFG Bank, Ltd.
A member of MUFG, a global financial group

30 JULY 2021

(ORIGINAL JAPANESE VERSION RELEASED ON 30 JUNE 2021)

In a move reminiscent of the Cold War era, the United States is developing its advanced technologies in light of the international competition in this area.

On June 8, the US Senate passed the bipartisan Innovation and Competition Act, which consists of several acts aimed at strengthening security against China and raising the US' competitiveness in cutting-edge technologies (such as AI, quantum science, semiconductors). One of these acts, the Endless Frontier Act, includes over USD140 billion* (0.6% of nominal GDP in 2020) to support research and development over a five-year period and is mainly aimed at supporting the National Science Foundation (NSF). This move to develop advanced technology from a security standpoint evokes memories of the Sputnik crisis, which led to the establishment of NASA in 1958, and the large-scale investment in space exploration during the 1960s (Chart 1 upper).

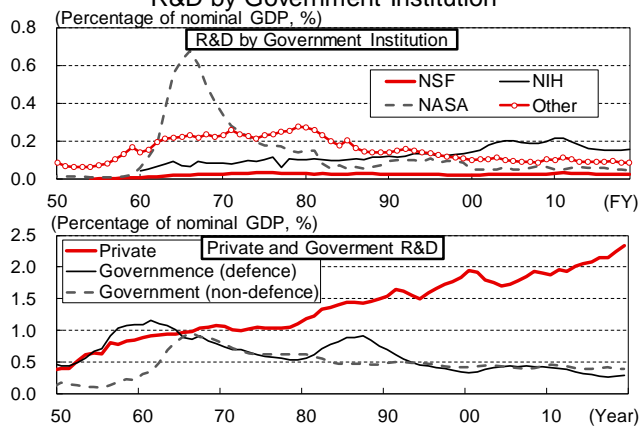
In the US today, research and development is led by the private sector (Chart 1 lower), yet much of today's major commercial technology is based on government-led research and development, the medium-to long-term impact of which cannot be overlooked. The Defense Advanced Research Projects Agency (DARPA), which was established after the Sputnik crisis, led to the development of the ARPANET – a precursor to the internet – and space exploration by NASA gave rise to the commercial use of weather and communications satellites and GPS. In addition, although not related to national security, research and development by the National Institutes of Health, which was expanded during the latter half of the 1990s due to the human genome project, is said to have laid the foundation for the mRNA vaccine, which has been pushed into the limelight by the COVID-19 pandemic. In recent years, the scale of research and development in the private "non-manufacturing" and "pharmaceuticals and chemicals" industries has been expanding (Chart 2), and it appears this has benefited government research and development to some extent.

Escalation of the US-China conflict is a matter of great concern for the global economy at present. Nevertheless, government-led research and development triggered by increased conflict may unintentionally contribute to the development of commercial technology. It is important to keep an eye on any positive impacts on the global economy resulting from competition.

*Another bill to support R&D has been submitted to the House of Representatives, and the details may change, including the amount of support.

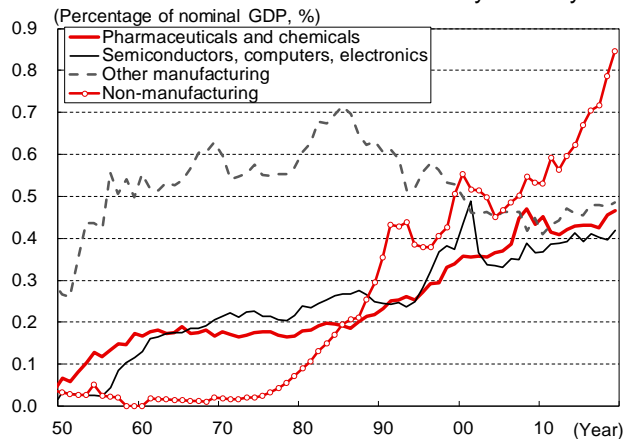
**In 1957, the Soviet Union shocked the US by succeeded in launching the world's first man-made satellite, Sputnik 1, ahead of the US. The US then increased its science and technology budget, starting with space exploration.

Chart 1: Private and Government R&D and R&D by Government Institution



Source: US Department of Commerce, Office of Management and Budget, MUFG Bank Economic Research Office

Chart 2: The Private Sector's R&D by Industry



Source: US Department of Commerce, MUFG Bank Economic Research Office

Translation by Elizabeth Foster

For further details, please contact the Economic Research Office, MUFG Bank

Managing Director, Rei Tsuruta Tel: +81-(0)3-3240-3204

Written by Sai Yabuki <sai_yabuki@mufg.jp>

This report is intended for information purposes only and shall not be construed as solicitation to take any action such as purchasing/selling/investing financial market products. In taking any action, each reader is requested to act on the basis of his or her own judgment. This report is based on information believed to be reliable, but we do not guarantee its accuracy. The contents of the report may be revised without advance notice. Also, this report is a literary work protected by the copyright act. No part of this report may be reproduced in any form without express statement of its source. This report is also available for viewing online.