

"Science Research Funding Disregards Private Universities," by Atsushi Takeuchi,
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News regarding the promotion of science and technology, particularly in information
technology (IT), has been prominent in the media. It's true that Japan's cutting-edge
technology is losing its competitive edge compared to a decade ago. While companies are
at the heart of research and development, the deteriorating economic situation has led
most of them to withdraw from basic research. To put it plainly, the reality is that they're
forced to focus on "product development" rather than "basic research." In this regard, the
importance of research institutions that support basic research—which can become the
seeds of future industries—is increasing.

Now that companies have withdrawn from basic research, universities are the most
promising candidates. In the United States, it's widely publicized that IT and
biotechnology ventures, built around new patents generated by universities, have fueled
today's economic boom. In these fields, universities like Stanford University,
Massachusetts Institute of Technology, and Harvard University frequently make
headlines.

In contrast, looking at the research situation in Japanese universities, it's frankly
difficult to say that they maintain the potential to compete with those institutions. If you
compare the number of patents generated by Japanese universities and the extent to
which they are put into practical use, the disadvantage of Japanese universities is clear.

Several factors could be behind this disparity, but the biggest difference lies in the
allocation of research funds and evaluation methods. The largest source of funding
supporting university research in Japan is the Ministry of Education, Culture, Sports,
Science and Technology's Grant-in-Aid for Scientific Research (Kakenhi). The recipients
of Kakenhi have recently started to be publicly disclosed. In fiscal year 2000, 141.9 billion
yen was disbursed, with 98.8 billion yen of that allocated through the Japan Society for

the Promotion of Science (JSPS). The JSPS website (<http://www.jsps.ab.psiweb.com>) publishes the recipients, and what's particularly interesting is the list of the top 20 universities in terms of Kakenhi adoption. Starting with the University of Tokyo at #1 and Kyoto University at #2, 19 out of the top 20 are national universities, with only Keio University appearing at #12 among private universities. Looking at the number of adopted projects and the amount of funding, the University of Tokyo, at the top, received 11.5 billion yen for 2,488 projects, and Kyoto University, at #2, received 7.5 billion yen for 1,881 projects. In contrast, Keio University received 1.2 billion yen for 485 projects, which is about one-tenth of the University of Tokyo's funding. Since about half of Kakenhi funding is medical-related, Waseda University, which doesn't have a medical faculty, received even less, with 282 projects totaling 600 million yen. Even when looking at the average amount per Kakenhi project, the University of Tokyo receives about 4.6 million yen and Kyoto University 4 million yen, while Keio University receives 2.5 million yen and Waseda University 2.2 million yen. As you can see, there's a remarkably large disparity in the number of adopted projects and the amounts.

Aggregating the entire list of recipients, 73 percent of the 98.8 billion yen goes to national universities, while private universities receive only 14 percent. The number of faculty members at national universities is 60,000 compared to 76,000 at private universities, and the number of students per academic year is 100,000 for national universities versus 470,000 for private universities. A simple comparison shows that the probability of a private university faculty member receiving Kakenhi is orders of magnitude smaller than that for a national university. In fact, it's not uncommon for some private university faculty members to say they don't even bother applying because they assume it won't be approved anyway.

However, it's clear that it's undesirable for Japanese university research to continue operating on a single engine, as it is now. From the perspective of research resources, the potential of faculty, students, and facilities at private universities should be utilized more effectively. In particular, a crucial element supporting scientific research is new ideas, which depend on individual creativity and ability. With the current Kakenhi allocation, it must be said that scientific research is practically being developed based on human resources and ideas heavily biased towards national universities. Furthermore, university research also carries the responsibility of education. An environment that exposes students to cutting-edge science and technology significantly fosters their abilities. In recent years, there has been concern about declining academic ability among

university students, but improving the level of research in their final year of university and in graduate school will contribute to their success in society. For this reason, many private universities are making maximum efforts to concentrate management resources on research, but the gap with US universities is undeniable.

In the United States, I understand that federal government scientific research funds are not differentiated based on whether a university is private or state-funded. Indeed, substantial research funds flow to private universities, and the three universities mentioned earlier are also private. Since university research benefits society in a broad sense, it seems odd to differentiate based on whether the research institution is national or private. Rather, from the perspective of returning public funds to the public, it's more desirable to broaden the pool of candidates and select excellent research from among them. The unique characteristics of each private university would also contribute to the diversity of ideas.

Currently, the Japan Society for the Promotion of Science appears to have an awareness of openness, as it disclosed the Kakenhi reviewers for the last fiscal year. However, in the case of science and engineering fields, 90% of the reviewers are faculty members from national universities, with private university faculty accounting for only 10%. This might be a result of the perception that Kakenhi is a government budget, so the review was entrusted to national university faculty who are national public servants. However, as is done by the National Science Foundation in the US, it's more appropriate for the promotion of science to seek reviewers broadly, regardless of their affiliation.

Going forward, we need to consider the social significance of scientific research and how it can benefit the public, and we should listen to a wide range of voices. Naturally, private university faculty should participate in equal numbers, and experts from various companies and organizations should also participate. I believe that further openness, including in the allocation and evaluation of research funds, is necessary for Japanese university scientific research to gain international standing and maintain dynamism in a broad sense.