

# Impact of University-Industry Collaboration Policies on University Patenting in Japan: An Analysis of Japanese National University Patents

たんていあすわでいくる からや  
TANTIYASWASDIKUL Kallaya

The implementation of university-industry collaboration policies has changed the absence of Japanese university patent activities to an active involvement in patenting, followed by a large increase in the number of patent applications by universities. Besides the achievement of a dramatic increase in number of Japanese university patents, there remains a critical question regarding their quality. This study aims to explore and examine the changes in the nature of university patents resulting from the implementation of UIC policies. In Japan, as policymakers move steadily in the direction of stimulating patenting activity by universities, no evidence is yet available on the characteristics of university patents and on their relative value. Concerning this importance, the critical questions need to be answered: (1) What are the unique attributes of university patents? (2) How do UIC policies affect university patenting? (3) How do UIC policies affect the knowledge diffusion from universities to industry? (4) What determinants determine university patent value?

Summary of findings in this study include the following: First of all, in terms of the unique attributes of Japanese university patents, Japanese university assignee patents are more basic than UIC patents. However, UIC patents allow inventors to successfully reap the benefits of their own inventions more than university assignee patents and UIC patents are faster in producing offspring. Compare to US university patents, US university patents are more basic than Japanese university patents, but the spillover effect of Japanese university patents is faster. Secondly, regarding the effects of UIC policies, UIC policies significantly affect the increase in both the UIC and university assignee patents. After the implementation of UIC policies, university assignee patents reflected the higher degree of basicness than UIC patents. However, the spillover effect of UIC patents is faster than university assignee patents and UIC patents have a higher degree for inventors to benefit their own inventions.

Thirdly, as for the knowledge diffusion from Japanese universities to industry, Japanese industry cites corporate patents more often than Japanese university patents. However, the gap between them has been continuously reduced since the mid-1990s, which correlated to the period of the first launch of the UIC policies. After the implementation of UIC policies, both the numbers of university patents and citations received from Japanese industry have increased significantly. Finally, to determine the value of Japanese university patents, the results reveal that the background and the distance in time of technology, and the scope of patent protection have positive impacts and significantly affect the value of patents. US and Japanese university patents share common determinants of value.

These findings have illuminated the Japanese university patenting debates and have important policy implications. Patenting in Japanese universities has grown continuously since the Japanese government began to encourage UICs, and Japan's UIC policies have yielded impressive results in university-industry technology transfer. The comprehensive evidence derived from a growing number of Japanese university patents and citations received from industry can ensure the UIC policies are heading in the right direction.