

Does Environmental Policy Induce Changes in Cross-border Green Knowledge Flows?

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Abstract

Importance of environmental technologies has been increasing for the past several decades, and the increase of cross-border knowledge flows of environmental related technologies is remarkable. Environmental policies are known as the drivers that influence the directions of environmental knowledge flows. Using the examiner citation data, this study investigates the impact of the Feed-in Tariff system that were introduced in 2009 and 2012 in Japan, respectively. We find that this system increased the backward citations of new patent applications in the target power generation sectors (solar, wind, geothermal, water, biomass) from China and Korea, while decreased the forward citations from the US, EU, China, and Korea. We also demonstrate that a supply factor, knowledge accumulation in foreign countries, also has a similar effect on backward and forward citations. There is no evidence that the FIT system increased the quality of environmental technologies in the target sectors in Japan. Rather, the policy increased the quality of foreign environmental technologies and the dependence of Japanese invention on foreign knowledge.

Keywords: Environmental technologies, Feed-in-Tariff, cross-border knowledge flow.

JEL Classification: O33, Q55, Q58.

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