

Green Inventions: Is Wait-and-see a Reasonable Option?

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Executive summary

This paper analyses how difficult it is to close the gap to the technological leader and test whether a wait-and-see strategy is a reasonable option to remain competitive in the green technological market. More concretely the paper analyzes the impact of different knowledge stocks on the gap to the green technological leader on the basis of a broad industry level data set.

The econometric estimations and a number of robustness tests considering, e.g., policy effects, suggests that, firstly, internal green knowledge is more important than external green knowledge in order to decrease the gap to the technological leader. Although available green knowledge from other industries within a country contributes to diminish the gap to the leader, it can only marginally compensate the lack of internal green knowledge. Hence, the spillovers from internal sources of green knowledge seem to be much larger than the spillovers from external sources. Secondly, internal green knowledge is more important than (internal and external) non-green knowledge in order to decrease the gap to the technological leader. This result contradicts the widely shared view that a strong knowledge base in *non-green* technologies reduces the risk of permanently lagging behind, since it is assumed that the technological distance between green and non-green inventions is low, and consequently firms can switch into green invention activities in case markets are developed. Instead, our results show that internal non-green knowledge does not reduce the technological gap and external non-green knowledge even increases the gap to the green technological leader. Looking at the disaggregated level of green

technological areas we even observe gap increasing effects of internal non-green knowledge for some areas.

Consequently, we can show that a wait-and-see strategy does not seem to be a promising way to proceed if one wants to face the environmental challenges and to be at (or close to) the technological frontier and thus keeping alive the options to benefit economically from future markets for green technologies. Hence, timely investments in the development of green inventions seem to be necessary.

