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Examining the Effect of Demand-Pull Policies on Technological Exploration and Exploitation

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Abstract

The recent years have seen a strong rise of policies aiming to increase the diffusion of clean energy technologies. While there is general agreement that these demand-pull policies have been very effective in bringing technologies to the market, it is less understood how these policies affect technical innovation. To shed more light on this important question, we conducted in-depth interviews with 34 experts and corporate managers in the solar photovoltaic industry. We propose that strong market growth induced by demand-pull policies increases the absolute level of firm investments

in technological exploration but leads to a simultaneous shift in the firms' balance between exploration and exploitation towards exploitation. Since firms pursuing pre-commercial technologies cannot tap the potentials of exploitative learning to the same extent as those with more established technologies, stimulating strong market growth favors more mature technologies. Moreover, our study suggests that policy-induced market uncertainty has an adverse effect on firm-level investments in exploration, particularly for firms which possess smaller amounts of slack resources. We conclude that, when designing demand-pull policies, great care should be taken to a) avoid excess market growth and b) ensure a high predictability of policies to reduce the likelihood of technological lock-ins.

Please contact the DRUID Society Secretariat (druid2011@druid.dk)
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