

Empirical Study on the Impact of Hydrogen Energy Policy on Industrial Innovation

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Abstract

This paper takes 240 hydrogen energy companies listed on the Shanghai and Shenzhen A-share markets from 2016 to 2022 as samples. Through the entropy method, a comprehensive index system is constructed to measure the innovation capability of the hydrogen energy industry, comprehensively assessing the industry's innovation from both innovation input and output perspectives. This paper reviews 130 Chinese hydrogen energy policies released during the same period, analyzes the characteristics of the policies, and calculates their effectiveness. By employing a two-way fixed effects model, the paper empirically analyzes the impact of policies on the innovation of the hydrogen energy industry. The paper finds that hydrogen energy policies significantly promote hydrogen industrial innovation. Mechanism analysis shows that financing constraints play a partial mediating role between hydrogen energy policies and industrial innovation. Policies indirectly promote corporate innovation activities by alleviating the financing pressure on hydrogen energy enterprises. Further research reveals significant differences in the impact of different types of policy tools on industrial innovation. Demand-oriented and environmental policies have a more pronounced impetus. Hydrogen energy policies also have varying impacts on industrial innovation in different regions. In the eastern region, policies have a greater promotional effect on innovation for hydrogen energy enterprises. And innovations led by hydrogen energy enterprises of various sizes are all promoted by the application of policies.

Keywords

Hydrogen Energy, Policy Evaluation, Industrial Innovation, Two-way Fixed Effects