

Environmental Policy and Technological Innovation in Shipbuilding

This paper examines the relationship between environmental policy and "green" innovation in shipbuilding. The primary motivating question of this work is whether there is evidence of: i) technology push from innovation that enables environmental policy initiatives; and/or, ii) policy pull that induces innovation leading to "green" ships. This paper focuses on four environmental categories of technological innovation in the shipbuilding industry, encompassing oil spill recovery, emissions control, climate change mitigation and ballast water treatment. The analysis draws upon documents filed at the International Maritime Organization (IMO) to proxy for policy measures, and uses patent data of the Worldwide Statistical Patent Database, maintained by the European Patent Office (EPO), to account for innovation. Our results show a similar trend between patent activity and IMO document submissions over the years 1998 to 2012 for the two environmental categories, climate change mitigation and emissions control. The key contribution of this work are to provide more insights into environmental policy in shipbuilding and its role in innovation activity, as well as to develop a rich dataset focused on IMO policies aimed at encouraging improved environmental performance by ships.

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