

# Porter hypothesis and pollution havens hypothesis via imitation and corruption in an R&D based North-South model<sup>8</sup>

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January 4, 2026

## Abstract

It is hoped that the provision of technology through the Clean Development Mechanism stimulates innovation and encourage developing countries to decontaminate and decarbonise. However, in countries with immature property rights and political systems, there is a risk that imitation of developed countries' technology and tax evasion involving bribery occur, and that the pollution haven hypothesis arises as a result of environmental policies. This study presents the mechanism of the pollution haven hypothesis by analysing the impact of environmental taxes, environmental tax evasion, and intellectual property rights (IPR) on economic growth, pollution, market share, corruption, and imitation in the North-South model with imitation. Economic growth and pollution reduction through environmental taxation in South imply the Porter hypothesis, but environmental tax evasion impedes this hypothesis. Environmental tax cuts in South with low IPR levels and tax evasion in South with high IPR levels lead to an increase in imitation rates, in addition to pollution havens and leakage from North to South, through labour migration between the manufacturing sector and the R&D sector. Depending on the IPR level in South, it is possible to avoid this pollution haven hypothesis. The deterioration of the quality of the political system by reducing fines for corrupt officials leads to the political pollution haven hypothesis, regardless of the level of IPR, but it can be avoided by improving the quality of the political system. This study suggests that the pollution haven hypothesis can be avoided by appropriate institutional design for patent rights and environmental regulations.

*Keywords* : imitation, intellectual property rights, tax evasion, corruption, political pollution havens hypothesis

*JEL codes* : H26, O30, O34, Q01, Q56

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<sup>8</sup> The author appreciates beneficial comments of the participant in the XXXVth Annual Conference on Contemporary Issues in Development Economics (CIDE2026) hosted by Jadavpur University on India. The author acknowledges the financial support from the Early-Career Scientists from the Japan Society for the Promotion of Science no. 22K13409 (JSPS KAKENHI grant no. JP22K13409). The author is responsible for all errors in this paper.

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