

# Does Trade Restriction on Second-hand Goods Improve Welfare in the Presence of Recycling of Hazardous Wastes?

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## Abstract

This paper examines the effects of trade restriction of older second-hand goods and monitoring of illegal trade on environmental damage and welfare. We consider a scenario in which imported secondhand goods may be used as secondhand or as materials. Environmental pollution is emitted when secondhand goods, which contain hazardous wastes, are recycled for material use in importing/developing countries. We demonstrate that when trade restriction is non-binding and a part of legally imported goods are used as materials, an increase in monitoring probability may increase expected foreign environmental damage. When trade restriction is binding, if a part of legal imports is resold for material use, a stricter trade restriction decreases expected foreign environmental damage. We also demonstrate that when governments choose monitoring probabilities non-cooperatively, the foreign monitoring probability is necessarily higher than that in the second best situation. In such a case, a commitment of monitoring probability by the home government improves welfares of both countries. Exogenous stricter trade restriction increases monitoring probabilities and decreases expected foreign environmental damage. Moreover, we consider a situation in which the foreign government chooses not its monitoring probability but the level of trade restriction.

**Keywords:** Hazardous wastes, monitoring, second-hand goods, trade restriction.

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