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# Emissions Leakage, Environmental Policy and Trade Frictions

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## Abstract

We develop a two-good general equilibrium model of a small open economy to decompose a country's unilateral strengthening of environmental policy's effects on pollution emissions in the rest of the world, known as emissions leakage. We show analytically and numerically that the level of emissions leakage depends on the level of trade friction in the service sector. In the model, production in the manufacturing sector is associated with pollution emissions, and production in the service sector is clean. In a special case with free trade in manufacturing and no trade in services, no leakage occurs. Allowing for trade in services, we solve for the relationship between trade frictions in the service sector and leakage. At lower levels of service sector's trade friction, leakage from a small strengthening of environmental regulation decreases (increases) if services are imported (exported). Finally, we simulate the model, calibrating the to the Canadian economy to compare these effects' relative sizes over a range of plausible parameter values. Leakage is about 18% lower when using trade friction levels estimated from the literature rather than assuming no trade friction in services.

**JEL classification:** H23, Q54, F18

**Key words:** Climate change, emissions leakage, trade costs, trade in services

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