A Tax-and-Refund System for Reducing Pesticide Use in EU Agriculture: Simulation Results for the French Arable Crop Sector

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Résumé

We present an original tax-and-refund system for incentivizing pesticide use reductions in the EU. This system consists in combining incentive pesticide taxes with area-based compensations (defined per crop and region) returning the tax revenue to farmers. These compensations mostly aim to increase the acceptability of incentive taxation schemes by farmers.

We assess the effects of the proposed tax-and-refund system with simulations obtained from a micro-econometric multi-crop model estimated with a large sample of French arable crop producers. According to our results, a 100% tax on pesticide prices reduces pesticide uses by 25% and implies crop return losses equal to 165€/ha on average. The proposed compensation

scheme reduces crop return losses down to 21€/ha on average and contains the effects of the taxes on acreage choices.

These results are encouraging since our simulation model ignores, by construction, potential adoptions of pesticide-saving production technologies by farmers (which would be fostered by pesticide taxes).

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