TRADE LIBERALIZATION AND THE ENVIRONMENT: THE EXPANSION OF AFFORESTED LAND IN CHILE

LIBERALIZACIÓN COMERCIAL Y MEDIO AMBIENTE: LA EXPANSIÓN DE LA TIERRA FORESTADA EN CHILE

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SUMMARY

Trade policy reforms affect the environment through the change in land use patterns. This paper examines the economic incentives for land conversion to forest plantations resulting from trade reforms implemented in Chile since the mid 70s. The economic incentives for land conversion are measured as the land rent changes under forestry and under unirrigated agricultural resulting from counterfactual policy scenarios.

Following recent literature the effect of trade on the environment is decomposed in scale, composition and technique effects. The scale effect is critically dependent on whether the afforested land was previously under native forest. The ratio of afforested land converted from native forest is estimated using available cartographic information for periods before and after the Native Vegetation Cadastre of 1996-1998.

The composition effect is investigated using meta-analysis to systematize available data on soil losses and water yields under alternative land uses and management practices. To explain the mechanism involved in determining the technique effect, domestic and international drivers are analyzed.

The results show the critical role of trade liberalization policies in creating the necessary economic incentives for the expansion of forest plantations in Chile. Since most of the plantation area was established on denuded land, the scale and composition effect on soil losses is estimated to be positive. A negative, and potentially important effect, results from water consumption of plantations, particularly in those areas with lower precipitation and higher radiation.