

The trade of virtual water: do property rights matter?

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My paper examines the determinants of the virtual water trade - embodied in the trade of agriculture products - by estimating a structural gravity model. In particular, it tests the relationship between property rights and the export of water-intensive agricultural products based on water footprint data in Mekonnen and Hoekstra (2011, 2012). Using two different measures of property rights protection, I show that countries with weaker property rights have an apparent comparative advantage in the trade of water-intensive products. After controlling for the economic size, natural resource endowments, and possible effects of reverse causality, the trade flow of virtual water is negatively and significantly correlated with the property rights index of the exporting country. Holding other factors constant, one point increase in the property rights index of a country is associated with a 24% - 36% decrease in its virtual water export, whereas a 1% increase in the natural resource protection index of a country is associated with a 16% decrease in its virtual water export.

This paper is the first empirical work that tests the relationship between property rights and trade of water-intensive products, offering a new perspective in the debate of virtual water trade. The findings provide a possible explanation on the paradoxical evidence that some countries with scarce water resources export water-intensive products. The result is important not only in terms of its theoretical relevance, but also its policy implications. As prescribed by the model of trade and property rights, when countries with weaker property rights open to international trade, they are more likely to over-exploit and thus expedite the depletion of natural resources.