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“Development on the margin”

Sub-Saharan Africa’s Role in International Biofuel Trade

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Abstract

Producing and exporting raw material for biodiesel like canola oil, palm oil or others, is an opportunity for many agriculturally dependent developing countries. Although they should have a comparative advantage in these goods, they do not export as much as would be expected. Especially sub-Saharan countries claim to be disadvantaged in the international trade of biofuels in terms of exporting raw products and the final biofuel to developed countries. Indeed, canola oil, the most important pre-product for biodiesel in Europe, is even mainly grown in industrialised countries.

This paper analyses the role of tariffs and other barriers in explaining trade patterns generally and the lack of trade in certain goods in particular. The reason for the small involvement of sub-Saharan African countries is of special relevance here.

Moreover, we will take a closer look at how the value chain is split up and analyse the effect of demand for bioenergy and supply of raw material on production patterns. An especially important topic to analyse in this respect is the decision which parts of a value chain to keep close to the production of raw material. This decision for or against fragmentation of the value chain is influenced by transport and production costs. They play a major role here and are taken into account in our model.

To control for period specific effects like the announcement or introduction of political measures concerning bioenergy, we use a set of panel data reaching from 2005 to 2009. The underlying model is a gravity model, since it is best suited to analyse bilateral trade flows. We allow for a zero inflated trade variable in the gravity equation to capture effects of potential bilateral trade relationships. A two stage estimator is applied to counter the resulting selection bias and spatial weights are introduced to control for spatial autocorrelation.

Keywords: Africa, biodiesel, biofuel, canola, gravity model, heckman, value chain