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## Analysing the EU Canola Oil Trade with Developing Countries: A Gravity Model Approach

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### Abstract

In recent years, many developed countries emphasised support for the production of biofuels in their political agenda. This new interest in biofuels arose mainly from the quest for increasing national energy sovereignty due to rising dependence on oil, but is also based on environmental concerns, and strong fluctuations of crude oil prices. Among others, the European Union (EU) has set a mandatory quota for the use of biofuel. By 2010, fuels used for transportation are required to have a fraction of 5.75 percent biofuel (biodiesel or ethanol). Whereas Brazil and the US are the major producers of fuel ethanol, Europe quickly became the world's most important producer for biodiesel. For European biodiesel production, canola oil is the main raw product. With this production of biodiesel, trade of raw products increased. Since the EU cannot satisfy its own demand, an import pull is created. Two main drivers are assumed to affect the amount of bilateral trade of European countries: (a) trade agreements with developing countries and (b) political measures like mandatory quotas in the EU.

This paper aims at evaluating the magnitude of the effect of European trade and sectoral measures concerning trade with external partners, especially developing countries. In doing so we control for steps of the value chain in examined countries, yielding an inference about the import pull created by downstream biodiesel industries.

In order to analyse the key factors related to the bilateral trade flows of canola oil for the use of biodiesel, a sector-specific gravity model is used. The empirical model uses cross-sectional data from 2006 for a sample of 41 countries, 24 of which are members of the EU, 18 of which are developing and emerging countries and the remaining being developed trade partners. We allow for zero inflated trade flows in the gravity equation in order to capture effects of potential bilateral trade relationships. A two stage Heckman estimator is applied to counter the resulting selection bias.

**Keywords:** Biodiesel, canola oil, gravity model, international trade, selection bias, zero-inflated data