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The Biofuel Price Stabilization Mechanism

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ABSTRACT

This article studies the capacity of biofuels to reduce motor fuel price fluctuations. We hypothesize the dependence between crude oil and biodiesel blend prices in Spain and the EU. Copula models are a method of study. Results suggest that the practice of blending biodiesel with diesel can protect consumers against extreme crude oil price increases. This can also help reduce the carbon emissions and the Green House Gases (GHG's) emitted upon burning fossil fuels

Keywords— *Biodiesel, Copula, Green House Gases (GHG's)*

While biofuel policies will target a good array of objectives, from socio-economic to environmental, the article studies the capability of biofuels (biodiesel) to cut back the vulnerability of national economies to energy value fluctuations. As the EU's transportation sector is highly dependent on crude oil imports, it is very sensitive to spikes in crude oil prices. Since biodiesel is created from renewable energy sources like agricultural commodities, its value ought to be less subject to crude oil value fluctuations. Using biofuel will contribute to the protection of customers against increases in crude oil costs, and such policies will target many objectives, from socio-economic to environmental (Serra and Gil, 2012).

The article studies the link between 2 pairs of prices: crude oil and biodiesel blends, and crude oil and diesel costs in Spain. We are notably inquisitive about modelling this dependence throughout extreme market events, that are the foremost possible to own relevant economic impacts. Copula models are used to assess dependence between the pairs of costs thought-about. These models are unambiguously suited once no obvious alternative for the variable density process value dependencies exist. The Copula may be a variable additive distribution that ensures that the marginal chance distribution of every variable is uniform on the interval [0, 1] which permits the research worker to concentrate on modelling univariate distributions rather than the variable one, which sometimes ends up in the development of higher models (Serra and Gil, 2012).

The analysis results recommend a symmetric uneven dependence between the crude oil and biofuel blend, that protects customers against extreme crude oil value increases. In distinction, diesel and crude oil costs, compatible with previous analysis, show a regular dependence by that each extreme crude oil value will increase and reduction are equally possible to have an effect on the customers. Thus, symmetrized Joe-Clayton Copula projected by Patton (2006) is getting used to point out the regular dependence as a special

case. Hence, the outline suggests that promoting biofuels will be a great tool to cut back national economies' vulnerability and dependency on the rise in crude oil costs (Serra and Gil, 2012).

As noted, higher than, biofuel blends ought to be less conscious of crude oil value fluctuations than typical fuels. This hypothesis is confirmed within the analysis for the Spanish biodiesel trade wherever Spanish production grew from 73 to 925 thousand tons throughout 2005-2010. Spain represents around 100 percent of the full EU's biodiesel production and is the third-largest producer after the Federal Republic of Germany and France. Results, however, shouldn't be generalized to alternative time periods, biofuels and alternative geographical markets. In being nonfunctional empirical models, time-series model results are totally hooked into the information used. Hence, the results solely apply to the market and amount analyzed (Serra and Gil, 2012).

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