

## **The role of road infrastructure in determining the price of grain freight in Brazil**

Agribusiness is a highly competitive economic sector in Brazil. The grain harvest has increased over the years in Brazil, but the logistic infrastructure has not been accompanied by this increase, which ends up causing difficulties in the outflow of production that is currently carried out mainly by the road modal. To reduce transport costs a practice known as "return freight" is common for grain routes. In this case, a contract is made to transport grains from the origin to the port of export and then the same truck must return with fertilizers from the port of export to the origin. This work was elaborated with the objective of analyzing the main determinants of the price of grain freight in Brazil. To achieve this objective, an econometric model was constructed using the following independent variables: harvest period, diesel price, route distance, highway quality and international grain prices. The results show that the highway quality index followed by the binary variable associated with the existence of return freight has a high influence on the freight price. These results suggest that market variables and logistic strategies, such as return freight, have a secondary weight in determining the price of grain freight in Brazil compared to road transport infrastructure, which is still deficient and highly dependent on public investment.

**Keywords:** Grain production, freight prices, logistics infrastructure.