

## ABSTRACT

### Effect of an Industrial Center on the Profit Efficiency of Crop Production in Southwestern Trinidad

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This study investigated the influence of Point Fortin, an industrial center, on the profit efficiency of main crop production, in southwestern Trinidad. The study tested the hypothesis that the increasing influence of an industrial center reduced the profit efficiency of farming the main crop. Socioeconomic and farm characteristics were also hypothesized to affect the profit efficiency of farming the main crop. The influence of the industrial center was measured by an Inverse Index of Industrial Influence (IFOUR) and this index was used to select the sample of farmers for the survey in the study. Data from the survey was used to estimate a stochastic profit frontier with IFOUR and other socioeconomic and farm characteristics being included to explain the mean and variance of the one sided error term in a Doubly Heteroskedastic with Homogeneity in the Mean Model (DHHM).

The results of the estimation of the DHHM model supported the hypothesis that the greater the influence of the industrial center, the lower the profit efficiency of farming the main crop. This result was the major contribution of the thesis. The results also demonstrated the appropriateness of the DHHM model for the estimation of stochastic profit frontiers and this study may represent the first time

this model has been used to estimate the stochastic profit frontier in a developing country or in an application to tropical agriculture.

The main recommendations of the study were that there is a clear case for raising the profit efficiency of the small farmers, since the mean profit efficiency was 48.4%, and for increasing the profit efficiency of the main crop of farmers affected by their proximity to industrial areas, in order to improve food security in industrializing economies.

**Keywords:** Industrial influence on farming, profit efficiency, stochastic profit frontier, Doubly Heteroskedastic with Homogeneity in the Mean Model (DHHM).