



# Efficiency Estimates for the Agriculture Sector in Vietnam: A Comparison of Parametric and Non-parametric Approaches

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This is a forthcoming article in *Agriculture Economics Review*. The paper uses parametric approach (based on stochastic frontier production function—SFPP) and non-parametric approach (based on data envelopment analysis—DEA) to estimate technical, allocative, and economic efficiency measures for the agricultural production in sixty provinces in Vietnam during 1995-2005. We use provincial data of agricultural inputs and outputs for these research purposes.

- Under the specification of variable returns to scale (VRS), the mean technical, allocative and economic efficiency indices of the sample provinces were 52.3%; 80.5%; and 42.1%, respectively, for the SFPP; and 82.1%; 81.5%; and 67.2%, respectively, for the DEA.
- Under the specification of constant returns to scale (CRS), they were 58.5%; 71.9%; and 42.1%, respectively, for the SFPP; and 79.3%; 80.9%; and 64.4% for the DEA.
- Although the estimated mean technical, allocative, and economic efficiency measures obtained from the DEA are higher than those from the SFPP in both VRS and CRS models, efficiency rankings of the sample provinces based on these two approaches are highly correlated, in which the highest correlation is achieved for the technical efficiency rankings under VRS and CRS.