SUMMARIES OF ARTICLES

Incorporating Waste Products into Model of Dairy Production : A Nonparametric Approach

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The purpose of this paper is to propose the production frontier model for multilateral productivity comparisions when undesirable products are taken into account and to analyze the technical efficiency with an animal waste in the case of dairy farming.

The sub-vector efficiency measures performance in terms of the ability of a producer to expand milk production, given its animal waste and its inputs using a nonparametric programming approach.

This approach was concerned to the decomposition of three technical efficiency concepts for this analysis: (1) the pure technical efficiency; (2) the scale efficiency; (3) and, the congestion of animal waste.

The data was collected 95 dairy farmers in the eastern part of HOKKAIDO in 1997.

The analyzed results were the following:

First, the sample mean of overall technical efficiency which incorporates animal waste (HOSCRS) is 1.13099. It was turned out to differ whether or not animal waste management was incorporated.

Second, the sample mean of pure technical efficiency (WSW), scale efficiency (WSS) and congestion of animal waste (CONGESTION) are respectively 1.09007, 1.02472 and 1.01479.

Third, HOSCRS and WSS vary depending on the farm size. CONGESTION varies depending on the farm size if applied to the comparison between small and large and, medium and large.

Empirical Analysis of Price Variability in Soybean Futures Market on the Tokyo Grain Exchange

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The purpose of this paper is to explore in detail the causal relation of the soybean futures markets between the Tokyo Grain Exchange (TGE) and the Chicago Board of Trade (CBT), and to search for sources of the ARCH effects on the TGE in as much as the volatility movements on the TGE can be explained by information accumulated on the CBT.

The approach to be adopted is similar to those suggested by Lamoureux and Lastrapes(1990), who utilized the GARCH model under the Mixture of Distributions Hypothesis (MDH) of Clark (1973). In the current study, the GARCH framework is extended to the exponential GARCH model of Nelson (1991). Based on MDH, the EGARCH model can capture the volatility persistence.

The empirical results suggest that total trading volume, as a proxy for information flow to the CBT, plays a statistically significant role in the price variability on the TGE. However, the persistence in volatility does not disappear when the volume variables are added to the conditional variance equation. Therefore, the volume on the CBT is only part of the sources of the volatility on the TGE. In addition, significant day-of-the-week effects are observed: the volatility increases on each Friday and Tuesday.