

Operational Efficiency in Credit Departments of Farmers' Associations with
Consideration of Non-Performing Loans and Negative Values: Application of
Dynamic Network DEA

Yung-Hsiang Lu, 陳柏琪, Tsai-Yu Hsiao

International Business

Management

pochi@chu.edu.tw

Abstract

This paper used dynamic network DEA to estimate the operating efficiency and profitability of credit unions associated with farmer's associations in Taiwan over the period of 2006–2011. We then used various network DEA methods for the analysis of efficiency and made comparisons. Our results provide a valuable reference for decision-makers in formulating strategies for farmers' associations. Measures of inefficiencies show the CDFAs' inefficiencies in RDM, PDFM and SORM models are rising, which means that CDFAs' operating efficiencies have worsening phenomenon and most inefficiencies are directly from the profitability inefficiencies, but previous literature rarely mention these information. In model comparisons, we find the SORM is the best for estimating the operating performance of CDFAs. But the estimating result in RDM shows higher efficiencies of CDFAs have lower profits, and it's not realistic. In the end, we use the results of SORM to discuss further depth and find urban CDFAs have the best operating efficiency and rural CDFAs are the worst during 2006–2011. The reason may be due to members have differences characters in deposits and loans.

Keyword : dynamic network DEA, credit unions, Non-Performing Loans,
Negative Values