

Efficiency Evaluation of Bank Branches by Two-Stage Network Data Envelopment Analysis Approach Consistent with the conditions of Iranian banks

Sajad Akbari^۱, Mohammadali Keramati^۲, Jafar Heydari^۳, Abbas Keramati^۴

^۱-Kish International Campus, University of Tehran, Corresponding Author

^۲-Department of Industrial Management, Central Tehran Branch, Islamic Azad University,
Tehran, Iran

^۳-School of Industrial and Systems Engineering, College of Engineering, University of
Tehran, Tehran

^۴-School of Industrial and Systems Engineering, College of Engineering, University of
Tehran, and Ted Rogers School of Information Technology Management, Ryerson
University, Toronto, ON, Canada

Abstract

Measuring and improving efficiency in banks is one of the most important applications of the Data Envelopment Analysis technique, and much research has been done in this area. In the last decade, with the entry of private banks in Iran, the industry has withdrawn from the monopoly of Government Banks, and this has led banks to seek competition to gain their maximum share of the monetary and financial market. Therefore, they should regularly performance evaluation their organization. One of the weaknesses of efficiency measurement models in banks is the disagreement regarding the determination of input and output parameters. In this study, a two-stage network data envelopment analysis model is proposed with inputs (fixed assets, number of personnel, operating costs), intermediate product (deposit) and outputs (income and profit). The advantage of this research to previous studies is that the result will be more realistic considering the inputs and outputs consistent with Iran's banking conditions. The interesting results of this research can be mentioned, there is no need to allocate high inputs in order to obtain the maximum efficiency of the branches.

Keywords: Data envelopment analysis (DEA), Two-stage, Network, Efficiency, Input-output models.