

摘要

在部份國家，鋼鐵產業往往會因為受到政府高度保護而呈現獨占或寡占的局面，然而受到世界貿易組織之自由貿易政策的影響，全球鋼鐵產業已經面臨激烈無比的競爭。本研究的主要目的是分析並評估環境的變遷對全球 30 家鋼鐵廠營運效率的影響，特別是研究所得的結果將可以有效地協助效率不佳的鋼鐵廠商改進其經營績效。

本研究在取得每一家鋼鐵廠商的營運資料後，利用標竿學習以及資料包絡法(DEA)，分別評估 30 家鋼鐵廠商的經營績效，並為其找到標竿學習的夥伴；而且在進一步檢視各群組的生產力指數後，發現擁有較高技術效率與規模效率的廠商，相對可獲得較佳的生產績效。此外，本研究亦進一步利用鋼鐵廠在 1992 年至 2003 年生產效率的變化模式來分析鋼鐵產業效率在不同時間點的變化趨勢。整體而言，本研究利用 DEA 與 Malmquist 生產力指數方法評估鋼鐵產業的競爭優勢以及標竿學習的實務做法可以為實務界提供一個有效的決策支援工具。

關鍵字：標竿、資料包絡法、效率前緣、標竿夥伴、Malmquist 生產力指數

Abstract

In many countries, the steel industry is a highly protected industry that operates in a state of monopoly or oligopoly. However, under the WTO and its policy of trade liberalization, many steel firms have faced more severe and competitive environments. This study intends to find out how the changes of competitive environments affects the operational efficiency of 30 major steelmakers worldwide, and most importantly, to identify how the weakest firms could improve their performance.

By using the DEA approach and benchmarking practices, this study obtained each steelmakers' efficiency data, then evaluated how they performed and compared with others in the steel industry, what benchmark objective(s) they should improve, and which company could be their benchmark partner. From the results of examining productivity indicators of three firm clusters, it is indicated

that steel firms with higher technical and scale efficiency tend to use their input factors more efficiently and achieve higher productivity performance. The study also investigated the patterns of efficiency change in steel firms from 1992 to 2003 to illustrate improvements over time. This study offers a very useful decision support tool for academicians and practitioners to evaluate competitive advantages and benchmarking practices of firms through DEA and Malmquist productivity index.

Keywords: Benchmarking, DEA, Efficient Frontier, Benchmark Partners, Malmquist TFP index