A Study of Business Efficiency of the Machine Tool Industry in Taiwan

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ABSTRACT

Machine tool is the fundamental machine of manufacturing equipments for the machining applications whichever is for basic or precision. works. In fact, the machine industry is the foundation of all kinds of manufactures and the most important key-link in the chain of the nowadays industrial production. In worldwide, the investment to the manufacturing machines is well-accepted by all governments as parts of the paid capitals. Most of advanced-tech products are made of the technology of machine tool. Particularly on categories of weapon, automotive and aeronautic industries, the developing of machine tool brings its progress forwarded than others. Recently, profits of the manufacture for Taiwan-base makers is extremely squeezed but not just because of the cost-increased materials globally, a blasted competition both from local existing competitors and the new ones such as Korea & China, and also the threats from the G7 leading makers ’ bleeding sales. Under such an environment, to increase the productive and to improve the efficiency shall be the solution for makers of machine tool surviving. This reaches adopts Data Envelopment Analysis and Malmquist Productivity Index to 12 public enterprises in category of industry machine manufacturing for the performance evaluation of their business efficiency and production variance during the period of 2002 – 2004 (3-year). The applied database of analysis elements include the net capital assets, the paid-costs, the expenses of R&D and numbers of employee as input factor, net income as output factor. This makes the conclusion as the following: (1) Total average of efficiency analysis appears a downward trend in all invested parties from 2002 to 2004, either this company gained with the biggest turnover or put the largest manpower. (2) The companies at the lower range of the total factor productivity change are greatly influenced by the poor performance of efficiency change , this index means the company was suffered by the worse policy and management. (3) Costing control is the most important element to decide whether if this company production is profitable or not.

Keywords : Data Envelopment Analysis, Machine Tool Industry, Efficiency

Table of Contents

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