

CHAPTER I

INTRODUCTION

1.1 Introduction

Rice is a significant commodity for both the Thailand and Taiwan economies. It is those countries staple food; and by-products of rice are also important for human and animal consumption. For the 1999/2000 crop, Thailand planted about 64.4 million rais to produce 24.2 million tons of paddy, yielding roughly 16.5 millions tons of milled rice. Of this, approximately 9.7 million tons were used for domestic consumption and about 6.8 million tons were left available for export. Thailand is one of the world rice producers amongst others big sources in Asia such as China, India, Indonesia, and Vietnam. It has been estimated that Thailand has approximately 4% of world rice production, with a substantial export share of 30% in the world market. Thailand has for almost 20 years been a rice exporter to the rest of the world (Office of Agricultural Economics, 2001). From Taiwan the Food Statistics Book for year 2000, annual rice production in Taiwan was increasing during the early postwar years. It increased steadily from 1.2 million tons in 1964 to 3.4 million tons in 1976. However, since 1977 it had declined sharply to 1.9 million tons in 1999. Hence, the area harvested for rice production was decreasing from 3.4 million rais in 1946 to 2.2 million rais in 1999. More than 90% of rice in Taiwan is used for food, feed, seed, processing, and brewing (Lee, 1996).

In recent years, there has been repeated emphasis on the importance of the need for increasing per-rai-productivity as a measure for solving country's food problem. As a step towards this goal, mention can be made of the introduction a high yielding varieties program, and the use of productivity estimates of improved paddy seed to highlight the relative performance of these seed over local unimproved paddy seeds. Besides the use of improved paddy seeds, greater use of fertilizers, as well other inputs, and the introduction of a host of labor saving devices, opens up tremendous vistas on enormous paddy productivity gains in the immediate future. It must not be forgotten, however, that apart from improved cultural practices, the availability of better processing services to the market is also equally important in increasing the availability of rice (Gupta, et. al, 1970)

Rice mills are one of the important economic units. A rice mill is an intermediate entity playing two important roles. As a production unit, it converts paddy into milled rice, and, as a marketing unit, it purchases paddy from farmers and forms part of the total distributive chain of milled rice to consumers, commercial merchants and government agencies. Rice mills can be classified based on three dependent characteristics comprising productive capacity, milling technology, and types of business.

Electric motor and automatic machines are common in two types of milling technology that exist in Taiwan and Thailand. But, Thailand has two more types; the diesel and steam engine technologies. Both small and medium size mills mainly use the diesel engine and electric motor. Whereas, automatic machines and steam engines are commonly used by medium and large mills.

Finally, private owners, companies and cooperatives/associations are the types of business that have a mixture of production capacity and milling technology categories.

1.2 Rationale

Rice has been the most important crop in both Thailand and Taiwan over the past century. This inevitably has led to the existence of many rice mills with a variety of sizes and technologies in almost every region of those countries. Rice mill businesses are highly competitive businesses in the rice marketing system. Taiwan is seen to be the leading country in this industry given its highly efficient production. This high efficiency was primarily due to the use of high processing technology. Recently, large mills in Thailand are beginning to modify machines for labor saving, i.e., the assembly line, dumpcart, etc. (Panjungharn, 1999). They imported milling machines from foreign countries, especially from Taiwan, to increase their competitive ability and efficiency.

According to the customs, Department in 1981, Thailand imported 1,932 sets of milling machines from Taiwan, 439 sets from Japan, and another 159 sets from other countries e.g. China and Germany.

So far, it remains unknown how this capital intensive technology contribute to improving the efficiency of production in the rice mill industry of Thailand. It is noticeable that the technology might not be appropriate for the labor available in Thailand. Most rice mills in Thailand are still using a lot of labor force for bagging, piling, carrying, loading, etc. On the other hand, given the same production techniques and scale, the firms may operate with different efficiencies. In addition, efficiency is also due to the differences in firm's availability of non-measurable

inputs, such as managerial ability, which affects the efficiency of measurable combined inputs such as the quantities of paddy and labor.

Therefore, it is important that a study be conducted to compare the technical efficiencies, and investigate how efficiently the resources are being utilized in the production management process in the rice milling industry (of the two countries) in order to produce the potential output. The results of the study will provide valuable indicators on management strategy concerning the rice mill industry for policy decision-makers.

1.3 Objectives of the study

1. To compare the rice marketing and production management process of rice millers in both Thailand and Taiwan
2. To analyze and compare the level of technical efficiencies for rice millers of both countries
3. To identify factors inducing differences to technical efficiencies of rice mills in both countries

1.4 Usefulness of the study

1. Because of the existence of differences in rice mill operations between the two countries, the empirical results will reveal differences in the technical efficiency of rice millers. Hence, Thailand (Taiwan) may learn some lessons on rice millers from Taiwan (Thailand), so as to improve its mill operation.
2. Strategies for enhancing technical efficiency can be drawn from the empirical results.

1.5 Organization of the study

The remainder of the study is organized as follows; the next chapter is a literature review introducing theoretical technical efficiency, method of Data Envelopment analysis and its application. In chapter 3, the analytical framework, data source and various model specifications in the empirical analysis are explained. Next, chapter 4 describes geographical conditions and structures of the rice sector in Thailand and Taiwan. The information for rice mill samples (to explain their roles) are shown in chapter 5. In chapter 6 is presented the empirical findings of data envelopment analysis and factors affecting technical inefficiency. The final chapter covers summary, conclusion and recommendation of this study.