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Journal of Housing Economics 12 (2003) 337–355

JOURNAL OF
HOUSING
ECONOMICS

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Economic efficiency of multi-product structure: the evidence from Korean housebuilding firms[☆]

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Received 13 June 2002

Abstract

The Korean housebuilding industry has been subject to structural changes since the 1980s. One of the key features is that housebuilding firms have become diversified into a range of businesses and as a result display multi-product structure. This paper examines the efficiency of the multi-product structure of Korean housebuilding firms. For the analysis, translog cost functions were estimated using data for 201 building firms for the 3 years 1993–1995. The empirical results indicate that medium-size building firms enjoy increasing returns to scale, whereas large firms experience constant returns to scale. Korean building firms exhibit significant economies of scope in their diversification activities. Large firms have the greatest economies of scope. These results are consistent with cost efficiency for the multi-product structure of Korean housebuilding firms. The estimated optimum scale suggests that many large firms should expand only through diversification.

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JEL classification: D21; L23; L74

Keywords: Multi-product structure; Economies of scale; Economies of scope; Optimum scale of business; Housebuilding industry

[☆] I thank Christine Whitehead, Diane Reyniers, and two anonymous referees for comments on an earlier version. I have greatly benefited from the helpful suggestions of the editor Henry Pollakowski.

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1. Introduction

The Korean housebuilding industry has undergone steady growth concurrently with general economic development since the 1970s. The industry has grown particularly rapidly since the mid-1980s and has experienced significant structural changes. Approximately 70% of new construction has been built by the private sector since the mid-1980s. Most of the private output has been produced by large-scale firms that the Korean government certified, and not by small-scale housebuilders which had dominated the industry before the 1980s. In addition, apartment houses comprise 70–80% of total new construction, whereas the single detached house was the most popular type until the beginning of the 1980s. Another important feature is that housebuilding firms have diversified by extending into a range of businesses unrelated to their own industry (Kim and Park, 1996). Even small firms which have recently entered the business are involved in various other businesses.

The emergence of large firms in the housebuilding industry since the 1970s is not confined to Korea and is found in other countries as well (Ball, 1996; Ball et al., 1988; Cough, 1988; Grebler, 1973; Lambert, 1990). Housebuilding firms in industrialised countries have begun to involve themselves in various businesses through the diversification strategy since the 1970s (Ball, 1983, 1988; Gillies and Mittelbach, 1962; Hasegawa and Shimizu Group, 1988; Hillebrandt and Cannon, 1990).

Kim and Park (1996) observe that most of the active housebuilding firms are carrying out more than one business besides housebuilding. Their main business is either housebuilding or other construction, but they are also involved in other businesses such as land development, property management (rental and sale), and other unrelated business (such as shopping centre development and rental, and restaurant business). There are distinctive differences among different sized firms. Large firms are mainly those that started business in other construction and have emerged into housebuilding business since the 1980s. They are very large scale in terms of numbers of employees, total sales, and capital. Typically, medium and small firms are those which started their business in housebuilding as speculative housebuilders.

Cho (2000) found that when we consider only direct production costs, housebuilding is more profitable than the “other construction” activities. However, large firms return relatively higher profits than small- and medium-sized firms, which are more involved in the profitable housebuilding business. One possible reason is that small firms incur relatively higher overhead costs, including interest and other financial costs. This suggests that large firms may be achieving economic efficiency from the large-scale, multi-activity nature of their business.

This paper examines the economic efficiency of the diversified product structure of Korean housebuilding firms. The plan of this paper is as follows: Section 2 reviews the implications of the economies of scale and economies of scope in the housebuilding industry. Section 3 introduces the form of the model for estimating the cost function of multi-product firms. Economies of scale and economies of scope are derived from the function. Section 4 outlines the variables to be included in the model, data sources, number of observations, and the estimation method. Section 5 contains the estimation results which address whether or not the multi-product structure is

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