TECHNICAL PROGRESS IN THE JAPANESE CONSTRUCTION INDUSTRY

Willie TAN

Department of Building, School of Design and Environment, National University of Singapore, Kent Ridge Crescent, Singapore 117566  Email: bdgtanw@nus.edu.sg

Abstract
Observers of the Japanese construction industry are generally divided into two camps. The positive camp views the industry as progressive and worthy to emulate, not only by developing countries but also developed countries. The negative camp views the industry as not progressive and saddled with institutional rigidities and interest group politics. This paper provides evidence that the Japanese construction industry is not substantially different from that of other countries in terms of factor substitution rigidities and technical progress (Tan 1996; World Bank 1984; Cassimatis 1969). The study is based on a long-term time series regression from 1961 to 1998.

Keywords
Japanese construction industry, elasticity of substitution, technical progress, construction productivity, co-integration.

INTRODUCTION

The purpose of this paper is to present evidence on whether the Japanese construction industry is “technologically progressive” in terms of its rate of technical progress (g). It measures the shift in the production function (or efficiency) over time, which is a broad measure as opposed to the narrower (engineering) measure of physical changes in technology. Thus, changes in institutions and organisation capabilities are also part of technical progress.

One view is that Japan is “Number One” (Vogel 1979) and, by implication, the Japanese construction industry is apparently technologically progressive and worthy of emulation by developing and developed countries. The opposite view is that the industry is not progressive for reasons such as institutional rigidities, industrial fragmentation and interest group politics. Such debates cannot be settled by pure reason or anecdotal evidence. For this reason, this study aims to provide some of the evidence using regression analysis on long time series data from 1961 to 1998.

The paper is organised as follows. The next section briefly reviews the debate on the merits and weaknesses of the Japanese construction industry. This is followed by the methodology of the estimation based on the neo-classical production function, a description of data sources and the results. The final section provides the conclusion.