AN ASSESSMENT OF THE TECHNICAL EFFICIENCY OF CONSTRUCTION FIRMS IN HONG KONG

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Abstract
This paper evaluates the technical efficiency ratios (ER) of construction firms in Hong Kong using the data envelopment analysis (DEA) technique. Input-output data down to 4-digit Hong Kong Standard Industrial Classification (HSIC) trade subgroups are used over an observation period of 1981-1996. The results show an increasing trend in average technical efficiency, although there were some fluctuations in the sub-periods. Furthermore, the factors affecting the level of technical efficiency and its growth are identified. The higher technical efficiency ratios come from those construction firms with less intensive capital, larger size, a lower degree of subcontracting, and a lower proportion of intermediate input consumption.

Keywords
Construction industry; technical efficiency; data envelopment analysis (DEA), Hong Kong

INTRODUCTION
The Hong Kong economy is one of the freest and most vibrant in the world. It underwent a period of remarkably fast economic growth during 1970s and 1980s, and Hong Kong is now regarded as one of the four “little tigers” in Asia. The construction industry has played an important role in Hong Kong’s economy. Its property and construction sector contributes about one fifth of the GDP and nearly half of the stock market capitalisation. Its GDP share is commensurate with the total of the wholesale, retail, import/export trades, and restaurant and hotel sectors. It is significantly greater than the manufacturing and financial services sectors. Almost 35% of government expenditure occurs in the property and construction sector, and over 33% of government revenue comes from related items. Moreover, the property and construction sector provides employment for one in twelve of the Hong Kong labour force (Walker, Chau and Lawrence, 1995). This paper adopts data envelopment analysis (DEA), which is a non-parametric approach, to evaluate technical efficiency in the construction industry of Hong Kong during 1981-1996. Moreover, factors affecting technical efficiency are assessed.

DEA MODEL AND THE TECHNICAL EFFICIENCY EVALUATION
Data envelopment analysis (DEA) is a non-parametric approach to evaluate efficiency in econometrics. It was developed by Charnes, Cooper and Rhodes (1978) using linear programming techniques based on the research of Farrell (1957).