Public Housing Construction as Agent of Technology Growth: Case of the Building Industry in Hong Kong

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Background
The Construction Industry Review Committee (CIRC) of Hong Kong recommended that the industry should make more use of prefabrication. The Committee believed that it will contribute to improve buildability and should be widely promoted, with public sector clients taking the lead. The aim of this proposed research is to investigate if and how this recommendation could be implemented with the public housing sector taking the lead. The research focuses on the public housing sector as the Housing Authority (HA) is until now the sole champion of prefabrication. The rest of the building industry, including public institutional building and private housing & building, have adopted no prefabrication apart from a very few instances. Preliminary analyses show that in the public sector, the housing sector is more concentrated than institutional building during 1992-98. It suggests that prefabrication raises technology barrier resulting in a handful of public housing contractors dominating the market. It also hints at higher construction costs due to less competition. This research on market concentration has extended the time series to cover a period of 15 years starting in 1988. This is to be followed by a quantitative analysis of the firms’ asset structure and financial performance. Together, the analyses aim to verify any empirical link that may exist between market concentration, and firms’ resources base and profitability. The results will facilitate the final stage of the research: in-depth case studies of leading public housing contractors. The studies will show how they have developed and sustained their competitive advantages in satisfying the client’s demand on prefabrication, and will identify the drivers and constraints of more use of it. Finally, the results and issues shall be validated with the industry and conclusions shall be made regarding the implementation of the Committee’s recommendation.

Significance of the Project
The findings will highlight the possibility, difficulties and constraints of making more use of prefabrication in and beyond the public housing sector. The public housing sector is significant because the HA is the de facto largest developer in Hong Kong. It has tremendous buying power to exert technology demand pull, which is found to be more effective than technology push in construction industry development. Without an institutional push, the private sector is likely to continue to adopt labour intensive but initially cheap construction methods. For the local construction industry, this research will find out whether the HA and their contractors together can take the lead in implementing CIRC’s recommendation on more use of prefabrication and standardization. To the body of knowledge on construction innovations, this research will contribute a case study of whether technical capability is a source of competitive advantage in the construction industry, whether it reinforces quality and cost competition and eventually leads to higher profitability, and the empirical link between demand pull and technology push in construction industry development.
Aims and Objectives
The purpose is to investigate whether the HA and the public housing contractors could collectively act as catalyst of what the CIRC wants the construction industry in Hong Kong to be: “an efficient, innovative and productive industry”. Leading public housing builders have been more successful than others in response to the client’s demands, particularly in prefabrication and industrialization. Through examining how this handful of public housing contractors have succeeded in capturing a large proportion of the market, this project aims to study the impact of this demand pull on the structure, performance and behaviour of the public housing industry in Hong Kong. We shall conclude whether the lessons learnt in the public housing sector could be replicated to the whole building industry.

Outcome and Deliverables
The objectives of the study are threefold. The first is to examine market concentration and to identify leading contractors in the two public sectors of housing and institutional building. We have found that the public building and housing sector in Hong Kong was dominated by three contractors. During a period of 15 years between 1988 and 2002, the annual market shares of these three contractors altogether ranged between 24% and 74% of the total annual contract value. The second objective is to establish if there is an empirical link between resources and performance of the contractors in these sectors. The results suggest that leading firms are able to consistently dominate the market because they are efficient in construction management rather than innovative in technology per se. They are resourceful more in managing the construction process than in developing and applying sophisticated technologies. The third and the last objective is to examine how the leading contractors have formulated and implemented their successful business strategies. We are in the process of identifying how the top three contractors have responded to the client’s drive in technological innovation, and how they have formulated strategies, and developed and sustained their competitive advantages.

References