

# THE RESIDENTIAL LAND AUCTION MARKET IN HONG KONG: MARKET SHARE AND PROFITABILITY

EDDIE HUI

Department of Building and Real Estate  
Hong Kong Polytechnic University

## ABSTRACT

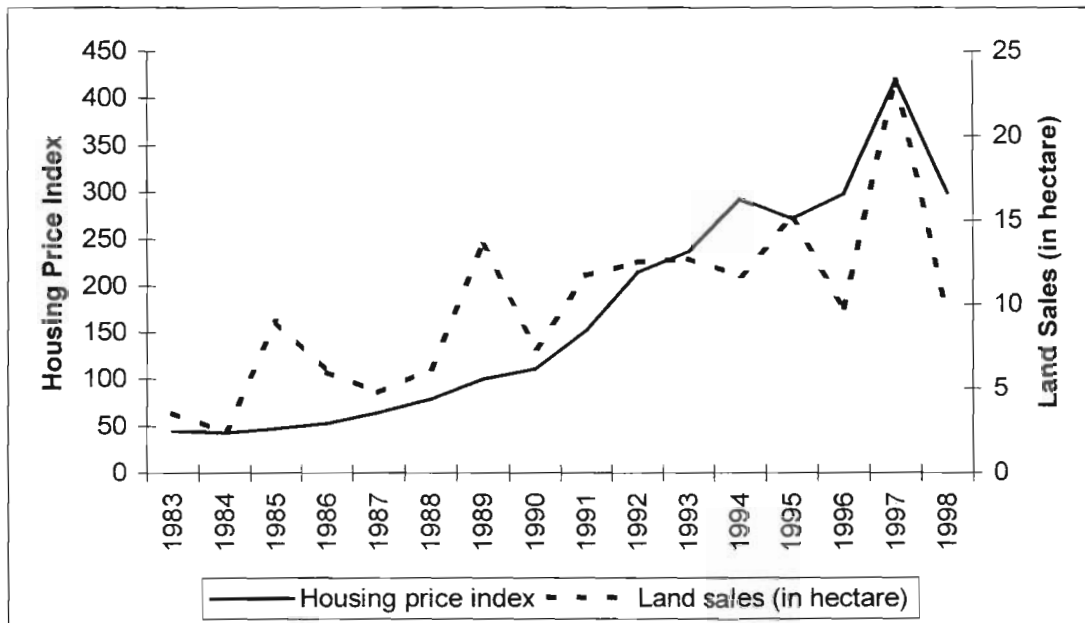
*This paper examines the relationship between market concentration and profitability in the residential land auction market in Hong Kong. In the land auction market, competition is keen and the land acquired is arguably expensive, with the market dominated by a few companies. This paper finds that the developers tend to locate themselves in a suitable market position or strategic domains, within which they sustain competitiveness by increasing their market share. Evidence suggests that a developer would adopt the competitive strategy which adjusts its positioning in the best use of its abilities.*

**Keywords:** Hong Kong, residential land market, market concentration, profitability

## INTRODUCTION

Hong Kong operates one of the most extensive public housing programmes in the world. The public housing built by the Hong Kong Special Administrative Region (HKSAR) Government, including both for sale and for renting, accounts for about half of the total housing stock in the territory (Hong Kong Government, 1999). On the other hand, the surge of housing prices in the private sector has long been regarded as a result of the shortage of housing supply which is caused primarily by the limited supply of land being controlled by the HKSAR Government. Figure 1 shows the annual land sales for private housing and the house price index in Hong Kong between 1983 and 1998.

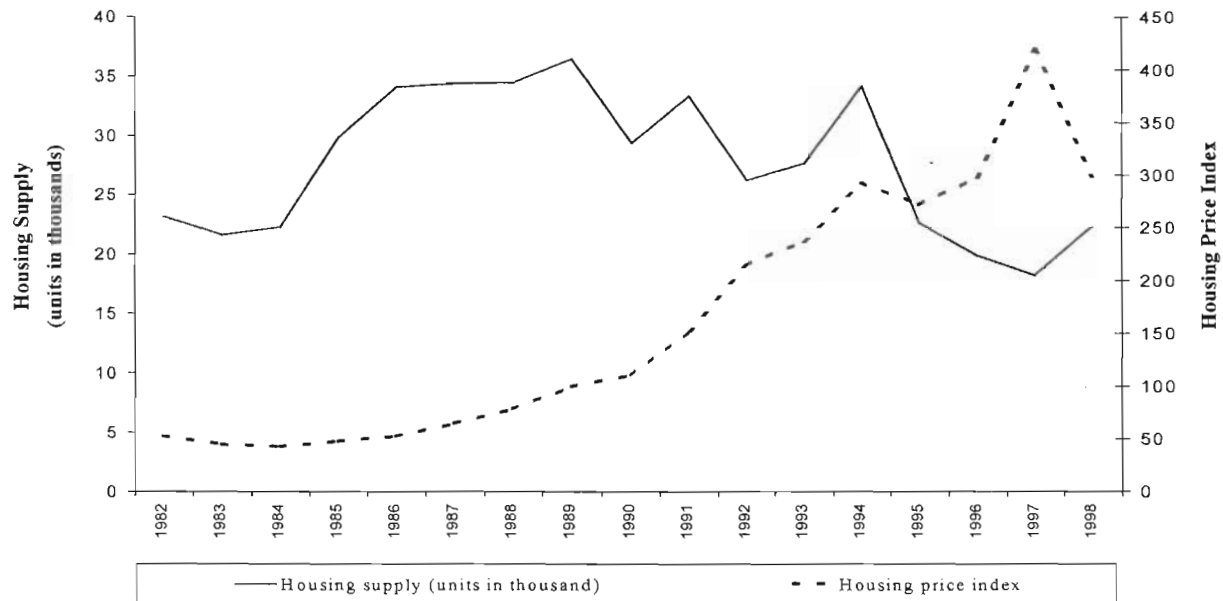
**Figure 1: Annual Land Sales and Housing Prices**



Sources: Land Sales – Lands Department  
Housing Price Index – Rating and Valuation Department

The housing prices experienced a gradual increase from the late 80s to early years of the 90s, but increased between 1996 and 1997, despite the increase of land supply by the Government for more house-building. However, by the end of 1997, there was a sudden downturn of the property market in the wake of the financial turmoil in Asia. It came to the point that a call was made by the public for an "extervention" of the Government to stop selling public housing, hoping to halt the drop of housing prices in this oversupplied market. Figure 2 shows the annual housing supply in the private sector and the house price index. Apart from the increase in the early 80s, the housing supply had been experiencing a gradual decline between 1988 and the late 90s, despite some peaks and troughs during the period. By contrast, housing prices were increasing progressively.

**Figure 2: Annual Private Housing Supply and Housing Price Index**



Source: Rating and Valuation Department

In Hong Kong, land can be acquired publicly through land auction, other than redevelopment and lease modifications. In the land auction market, competition is keen and the land acquired is arguably expensive. At the same time, land auctions constitute a major source of revenue for the government. Between 1985 and 1994, the income from that market, on average, accounted for 18% of the overall land market share (see Table 1). In the last three years, such income became even more stable, at about 15% to 19%. The land auction market is determined by the interplay of demand and supply and the state of the market competition. This is largely associated with developer's behaviour, which affects efficient competition and market concentration.

**Table 1: Share of the Public Land Market in the Overall Land Market: 1985 – 1994**

Year	Overall Land Market (HK\$ million)	Public Land Market (HK\$ million)	Share of Public Land Market in the Overall Market
1985	6,919.56	2,558.00	36.97%
1986	28,122.39	2,243.00	7.98%
1987	17,915.32	3,122.00	17.43%
1988	32,410.52	2,220.00	6.85%
1989	31,176.10	10,018.00	32.13%
1990	21,419.61	2,159.70	10.08%
1991	41,071.78	7,424.50	18.08%
1992	58,225.31	8,741.90	15.01%
1993	81,791.48	15,880.00	19.42%
1994	80,977.00	14,521.20	17.93%

Sources: Hong Kong Monthly Digest of Statistics

## COMPETITIVENESS AND CONCENTRATION IN THE LAND MARKET

Competitiveness is often defined as the ability to provide products and services as or more effectively and efficiently than competitors. With respect to land bidding, developers which may offer the highest bid price and be persistently successful in obtaining land would often be regarded as having strong competitiveness, in that they are able to maintain a strong financial back-up and enjoy economies of scale. Competitiveness, and the nature of competition, is influenced by the market structure and characteristics (Bannock *et al.*, 1987).

According to the Hong Kong Consumer Council (1996), the land market in Hong Kong is highly concentrated with a small group of companies that dominate a large volume of land resources (four developers took up more than 40% market share of residential land bank in 1996). Tse (1998) argues, however, that to judge whether a market contains any market power, one would have to consider whether the market is contestable. A contestable market depends upon whether the entry is free and exit is costless (Bain, 1956). In addition, an assessment of the competitive situation depends on the experience curve for each competitor in the industry. The degree of competition in the market in turn affects market structure, that is interrelated to market concentration and auction/bidding behaviour.

Market concentration is connected to market share, and they are used interchangeably in most contexts. There are many definitions for market share/concentration. For example, Drew and Skitmore (1993) defines market share as a measure of success and is regarded as being the most important indicator of the firm's degree of monopoly power. Similarly, Shepherd (1990, 1995) identifies market share as the most important single indicator of the firm's degree of monopoly power in an ordinal sense (compared to higher or lower shares in the same market). Higher market shares always provide higher monopoly power, while low shares involve little or none (Cronin, 1983).

Market concentration is related to bidding performance. Bidding performance in the land market is a reflection of the competitive process. With the assumption that developers use the strategic domain as their bidding strategies, through investigating the market share of developers in land auction, bidders are able to locate the domain of their competitors (Train, 1991). They can monitor their success relative to their competitors and find out who are leading different sectors of the land auction market.

The bidding strategy/behaviour of a company can be generally characterised by using Porter (1980)'s generic theory. According to Porter, a company is able to position so as to make the best use of its abilities and hence discern it from its competitors and make the company stand out from its competitors. This can be achieved in three ways; cost efficiency, product differentiation and focus-based domination. Lower cost refers to the ability of a company to design, produce and market a comparable product more efficiently than its competitors. Product differentiation, in contrast, refers to the ability to provide unique and superior value to buyers in terms of product quality, special features, or after-sale service. The third generic strategy consists of targeting a particular market segment where the firm can develop a distinctive strength. However, the theory does not address specifically enough, the factors affecting decisions on land auction.

When making a decision on whether to bid or what type of land should be bid for, developers consider many issues, both internal and external (Whitaker, 1981). The financial situation and the scale of the company are probably the most important internal factors to be considered at the company level. The huge capital and risk involved tend to see larger developers outbid small and financially weak companies. Big developers with strong financial back-up are able to enlarge their own land banks, and this situation is evidenced by the high concentration of the land auction market (Titman, 1985).

For external factors, the market interest rate is one of the crucial factors affecting developer's decisions in land holding or land bidding. It is because the volume of the land bank tends to vary with the change of interest rates (Tse, 1998). In fact, the expected marginal return of land holdings actually represents the rate of growth of land prices. Moreover large volume of land holdings can serve as a buffer to reduce the risk of uncertainty in production (Shea, 1998). On the other hand, Government's policy plays an important role in the land market. Specifically, planning policy has direct influence on the development potential of land resources. Government's policy on the real estate market will have great influence on the profitability of developers and their decision on land auctions.

Little has been done on the relationship between market share and profitability in the land market. One report which is relevant to this topic of market concentration, was conducted by the Hong Kong Consumer Council in 1996. The report has comprehensively investigated the competitiveness of the residential property market in Hong Kong. The report states that the housing market structure in Hong Kong is highly concentrated and has been monopolised by a small group of large developers over the past years. Developers tend to occupy a high market share of the land bank, and the largest seven developers have supplied nearly 70% of all new private housing. The report also shows the financial performance of the developers and further points out that developers have been earning significant profits in property development. Hence, it was concluded that there was relationship between market share and profitability for property development, although the report did not provide further evidence on this.

Though little is done on land markets, there are numerous papers on the relationship between market share and profitability. Earliest research dates back to the studies of Profit Impact of Marketing Strategy (PIMS) by Buzzell *et al.* (1975). They argue that achieving high market share is considered by many businessmen to be a principal criterion of success in the market place. The factors they found linking the two are economies of scale, market power, and quality of management.

Buzzell *et al.* (1975)'s argument has been supported in numerous empirical studies. For example, Day and Montgomery (1983) proposed that efficiency theory which predicts that businesses with large market shares are more cost efficient because of the experience curve and scale effects that ultimately lead to greater profitability. The market power theory posits that businesses with large market shares have the power to obtain inputs at lower costs, extract concessions from channel members and set prices rather than be price takers to increase their profits.

Another study conducted by Hergert (1984) uses Return On Assets (ROA) which is regressed against market share on some 5,400 business and 76 industries. Hergert suggests that the higher the market share, the more profitable is the company. Although the

relationship between ROA and market share is positive in about a third of the industries studied, the results are insignificant. For almost another third of the industries, the relationship was negative and either significant or not significant. Hergert concludes that the alleged association between market share and profitability is not strong enough to warrant strategic marketing and management decisions to press for market leadership. In fact, the market share – profitability relationship does not show which is cause and which is effect.

There is also likely to be a negative relationship between market share and profitability because of the “winner’s curse”. The argument is that the winner accepts a price that is unacceptable to all other competitors. The auction has exhausted all or most of the potential benefits to the winner. Fine (1975) applied the winner’s curse to the building industry: the successful tenderer is the one who made the largest underestimate of the true cost. Negative views on the relationship have also been supported in numerous empirical studies such as Jacobson (1988), Shanklin (1988), and Fraering and Minor (1994). However, Jacobson (1988) finds that there is no relationship between ROA and market share and concludes that previous findings of a positive relationship are due to a lack of control for extraneous variables. Achievement with respect to market share and profitability is mainly the result of management skill or luck (Szymanski *et al.*, 1993).

This view is also supported by Fraering and Minor (1994) who argue that the relationship between market share and profitability is too weak to justify a commitment to achieving market share dominance. They point out that the instances of concurrent market share and profitability leadership occur in only a few industries or is possible under a severely limited set of circumstances. It is notable that, according to this study, that “only a few industries” includes home building and this was found to be of the strongest positive links between market share and profitability, a result due to the economies of scale. However, they concluded that firms should not only rely on the pursuit of market share, but also alternative strategic goals with the hope of increasing return on assets. We argue that developers, big or small, tend to locate themselves in a suitable market position and sustain their competitiveness by increasing the market in a particular domain.

## **METHODOLOGY AND DATA SOURCES**

To gauge competitiveness, we examine the market concentration level of individual developers in land auctions between 1987 and 1995, the latest available data. The ten leading developers were chosen. In cases where land is acquired by joint venture, it would be apportioned among the developers involved in accordance with their respective shares in the development. The following section provides the findings in terms of total market share, scale of development and profits from property development. This is followed by an analysis of the relationship between market concentration and profitability. Since property development has a long gestation period in planning, organizing and constructing the project, the land acquired cannot be transformed into floor area immediately. Hence, profits will not be realised until the property is sold. In this study, the land acquired was measured for the period 1987-95, and then compared to the profits obtained in 1996, 1997 and 1998. Data were collected from various sources, both first hand and secondary, including the Lands Department, Buildings Department, Rating and Valuation Department and various company reports.

## ANALYSIS AND FINDINGS

### **Market share (total land area and total gross floor area)**

Table 2 presents the market share of individual developers in terms of the total land area (LA) acquired in land auction and the total gross floor area (GFA) produced between 1987 and 1995. Over the period, 931,000 sq m of the auctioned LA had produced a total of 2,275,000 sq m GFA. The calculated average development density ratio is 2.44. These findings suggest that the land auction market was highly concentrated. Ten developers made up more than 70% of both total LA and total GFA. On the other hand, the top ten acquired 3 to 31 pieces of land, with the average development density ratios from 0.73 to 3.5.

Among the top ten, Sino has acquired the largest amount of land via land auction (201,429 sq m) over the period and could produce the largest amount of floor area (706,789 sq m). The first runner-up is Wheelock (94,850 sq m LA or 10%), producing the second largest GFA (272,473 sq m or 12%), followed by Nan Fung (71,083 sq m or 7%) and China Overseas (64,419 sq m). It can be seen that Sino was very aggressive in land auctions. It took up 22% of the total LA supplied and 31% of total GFA during that period. Regarding the market concentration, the market share of the top four developers is 47% of total LA and 56% of total GFA.

Cheung Kong was the smallest market share among the top ten. It had the smallest amount of land from auction (9,801 sq m), which produced only 9,496 sq m GFA. Development density ratio is the ratio of maximum GFA produced to the total land area. The land obtained by Sino Land has the highest average development density ratio. This is followed by Sun Hung Kai which was able to produce more GFA than Nan Fung, though it had more auctioned land. Among the top ten, Wheelock was able to achieve the highest average floor area per lot, followed by Sino and Sun Hung Kai. By contrast, Cheung Kong was the least, because their maximum GFA attained for each lot was very small. Table 3 indicates that Sun Hung Kai, Cheung Kong and Henderson have been consistently ranked top-three in terms of net assets, which is usually a more reliable and stable measure than market capitalisation.

**Table 2: Total Land Area Acquired and Total GFA Produced Through Land Auction: 1987 – 1995**

Developers	Total Land Area (sq.m.)	Max G.F.A (sq.m.)	Development Density Ratio	No. of sites involved	Max G.F.A (sq.m) per lot
Sino Land	201,429	706,789	3.5	31	22,800
Wheelock	94,850	272,473	2.87	11	24,770
Nan Fung	71,083	173,834	2.45	12	14,486
China Overseas	64,419	163,636	2.54	11	14,876
Sun Hung Kai	60,196	181,387	3	8	22,673
Kerry	48,270	36,242	0.75	7	5,177
Hang Lung	45,147	78,265	1.73	7	11,181
Henderson	41,244	29,971	0.73	6	4,995
Lai Sun	34,590	68,521	1.98	5	13,704
Cheung Kong	9,801	9,496	0.97	3	3,165
Other (50 developers)	254,857	554,331	2.18	58	9,557
Total market share of 10 developers	72.62%	75.63%			
Total	930,666	2,274,945		112	
Average			2.44		

Sources: Various company reports (1996-1998).

- Note: 1. The actual total number of pieces of land involved might be different from the land holding of each developer, because developers may have joint venture in land auction.  
2. Development Density Ratio = Max. GFA/Total Land Area

**Table 3: Ranking for Net Assets of Developers**

Developers	Net Asset*			Ranking		
	1996	1997	1998	1996	1997	1998
Sun Hung Kai	123,995	170,666	147,853	1	1	1
Cheung Kong	85,433	98,570	100,868	2	2	2
Henderson	66,734	88,052	75,197	3	3	3
Hang Lung	47,526	52,295	42,080	4	5	5
Wheelock	43,588	65,232	67,926	5	4	4
Sino Land	32,030	43,577	34,960	7	6	6
Kerry	35,544	38,682	34,363	6	7	7
Lai Sun	19,400	26,832	30,452	8	8	8
China Overseas	9,741	15,700	13,341	9	9	9

Note: Since Nan Fung is not a public company, its financial report is not available. Nan Fung is therefore not included in this Table.

\*Net Asset = Total Asset – Current Liability (in million HK\$).

Sources: Various company reports (1996-1998).

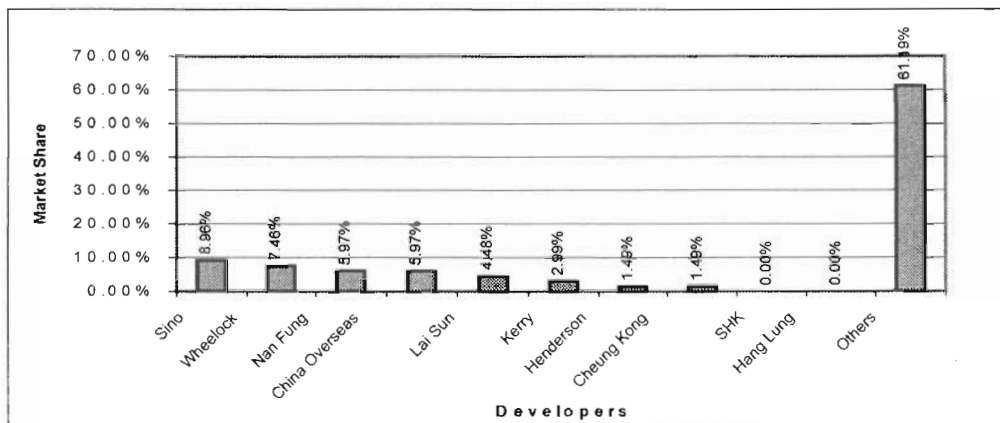


## SCALE OF DEVELOPMENT

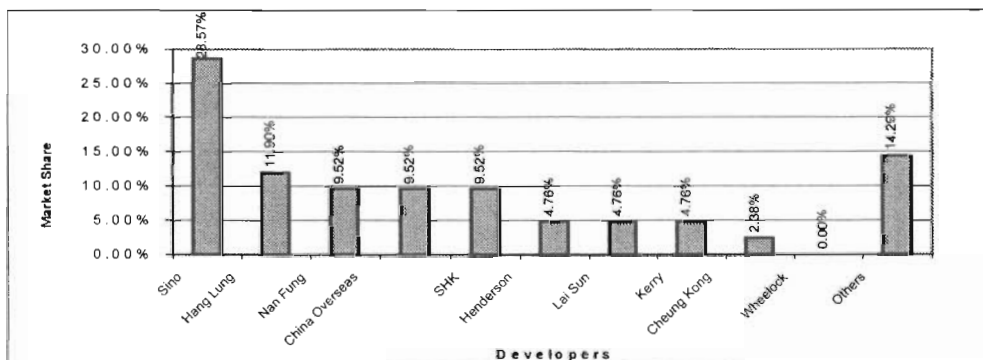
According to the Consumer Council (1996), a lot which produces more than 500 units can be said to be a large scale development. Based on this definition, we can identify different types of development. For the purpose of this study, the medium development scale is also introduced, which means that a lot can generate 250 to 500 dwelling units. Analysis of the data shows that among the 112 pieces of land offered in auction for the period 1987–95, a total of 57 pieces can be categorised as small-scale development, another 25 pieces are medium-scale development while the remaining 20 pieces are large-scale development.

Figure 3 illustrates that the market share of developers in acquiring land of small-scale development. It is expected that the 50 fringe developers take up the largest proportion of market share (61%), whereas the most active ten developers appear to be not interested in this market, taking up less than 40% of the total market share. Thus there is no market concentration in the market of small-scale development. In the small-scale development, the participating developers are mainly small developers. Developers of this kind usually take up a small proportion in joint venture bids or are only able to afford small-scale development with less capital involved and lower financial obligations. In the small-scale developments, no developer has dominated the land market and the market competition is rather keen.

**Figure 3: Market Share in Small-Scale Developments: 1987 - 1995**



**Figure 4: Market Share in Medium-Scale Developments: 1987 - 1995**



**Figure 5: Market Share in Large-Scale Developments: 1987 – 1995**

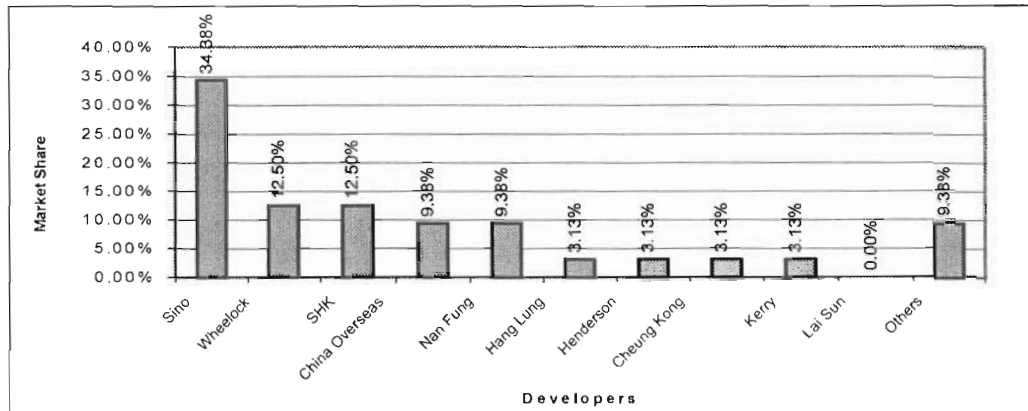


Figure 4 shows the market share of developers in the medium-scale developments. The market share of the small or fringe developers in this market is relatively small, i.e. 14%, which is small compared to their share in the small-scale developments. By contrast, the market share of the top four developers accounts for about 60% of the medium-scale developments. Among them, Sino Property occupied the largest proportion of market share (around 29%) followed by Hang Lung (around 12%).

For the large-scale developments, the auctioned land for large-scale development projects has been dominated by the big developers. The market share of the top four developers is about 70% and the developer which took up the largest share (34%) again is Sino Property (see Figure 5). It is noticeable that the market share of the 50 fringe developers in this market shrinks to only 9%. This may be due to the limited financial capacity of small developers who cannot afford to finance large-scale development projects.

## PROFITS FROM PROPERTY DEVELOPMENT

In Hong Kong, most property development companies are a hybrid property entity which deals simultaneously in property development and investment. Table 4 shows the income (profits) from property development as a proportion of total income. Among the developers, Sino Land had the 2<sup>nd</sup> highest proportion of income from property development during the period 1996-98. On the other hand, its ranking for profit amount rose from 5 in 1996 to 3 in 1998 (see Table 5). The analysis indicates that in 1998, profits from property development constituted the major revenue source for Wheelock, Sun Hung Kai, Henderson, Sino Land and Cheung Kong. Sino Land also took the highest market share in land auctions. By contrast, Sun Hung Kai and Henderson that took the top ranking in profits from property development were not so active in land auction activities.

**Table 4: Developer's Profits from Property Transactions (percentage)**

Developer	1996	1997	1998	Share in land auction 1985-94
Sino Land	89.7	67.2	76.3	21.6
Wheelock	12.2	59.7	80.6	10.2
China Overseas	48.6	38.1	45.9	6.92
Sun Hung Kai	58.6	63.2	62.1	6.47
Kerry	50.7	56.1	37.0	5.19
Hang Lung	37.9	42.3	29.4	4.85
Henderson	84.1	84.1	70.4	4.43
Lai Sun	45.9	54.7	13.9	3.72
Cheung Kong	64.7	58.9	76.3	1.57
Average	54.7	58.3	56.0	

Source: Various company reports (1996-1998).

Note: Since Nan Fung is not a public company, its financial report is not available. Nan Fung is therefore not included in this Table.

As far as individual developers are concerned, the findings suggest that the developers without a sufficient land bank tend to be very aggressive in land auctions. This explains why Sino Land has been so active in the land auction market. By contrast, the most profitable developers (by ranking), e.g. Sun Hung Kai, Cheung Kong and Henderson, did not take the largest shares.

**Table 5. Ranking for Profits from Property Transactions and Share in Land Auction**

Developers	Profit from property development			1985-94
	1996	1997	1998	Share in land auction
Henderson	1	2	2	7
Sun Hung Kai	2	1	1	4
Cheung Kong	3	3	4	9
Hang Lung	4	4	6	6
Sino Land	5	5	3	1
Kerry	6	7	8	5
China Overseas	7	9	7	3
Lai Sun	8	8	9	8
Wheelock	9	6	5	2
<i>r</i>	-0.350	-0.217	0.183	

Source: Various company reports (1996-1998).

Note: Since Nan Fung is not a public company, its financial report is not available. Nan Fung is therefore not included in this Table.

Since property development has a long gestation period in planning, organizing and constructing the project, the land acquired cannot be transformed into floor area immediately. Hence, profits will not be realised until the property is sold. In this study, the land acquired was measured for the period 1987-95, and then compared to the profits obtained in 1996, 1997 and 1998. Table 6 shows the correlation between profit shares from property development and the shares of developers in acquiring land of small, medium and

large-scale developments, total GFA and share of total floor areas generated from the auctioned land. The results indicate that the profit share from property development has a strong correlation with the share of land acquired in the large-scale development. This implies that the property developers undertaking a relatively high proportion of large-scale development projects tend to have a higher proportion of profits from property development. This is also supported by the positive correlation between the total floor area (or market share of total area) generated from the amount of land acquired and profit shares.

**Table 6: Profit and Market Share Correlation Analysis**

	Profit-96	Profit-97	Profit-98
Large	0.365	0.199	0.631
Medium	0.556	0.021	0.226
Small	-0.053	-0.034	0.326
Area <sup>a</sup>	0.279	0.179	0.505
Market Share <sup>b</sup>	0.286	0.181	0.519

a: Total GFA generated from the auctioned land;

b: Market share of the total GFA generated from the auctioned land

In order to determine the degree of association between the share in land auction (1985-94) and the share of profit from property development (1996-98), we apply Spearman's rank-order correlation coefficient to Table 5. The correlations range from -0.35 to 0.18, further supporting the previous argument that the leading developers who get the largest share of profit from property development did not take the largest share in the land auction market.

## CONCLUSIONS

This paper has examined the residential land auction market in Hong Kong. Evidence shows that the residential land market has been highly dominated by a few companies. Ten developers made up a sheer majority in terms of both total LA and total GFA. The top four accounts for 47% of total LA and 56% of total GFA. It is noteworthy that the most profitable developers tend to acquire land not through land auction. Though land exchange and lease modifications generally require much longer time, these methods prove less expensive, as long as the developers have the expertise. This explains in part why the most profitable developers tend to have a higher level of profits in property development.

As for different sizes of property development, we found there is no evidence of market concentration in the small-scale developments. Several big developers, however, tend to dominate in land auction for medium and large scale developments. In the latter auction market, small developers account for less than 10%. This is likely attributed to their limited financial capacity, with little net assets they can pledge as collateral. The analysis of the relationship between market concentration and profitability suggests that:

- Developer's profit share has a strong correlation with the share of land acquired from auction in large-scale development.
- Large-scale development carries a greater risk, and also a relatively higher return.

Our results have implications about the importance of competitive strategy over sheer increase in market share. As discussed before, competitiveness is often defined as the ability to provide products and services as or more effectively and efficiently than competitors. In this case, some developers would be regarded as being competitive if they are persistently successful in obtaining land by offering highest bids. Yet, they are not necessarily most profitable, at least in overall terms. This reveals the fact that developers, like other firms, would choose to locate themselves in a suitable market position or strategic domain. They tend to adopt a competitive strategy that makes best use of its abilities and hence discern themselves from their competitors. In their strategic domains, they become competitive by gaining their market share. By doing so, the cost for production can be controlled and minimised, and a significant level of profit margin can be ensured.

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