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THE UNIVERSITY OF HONG KONG

**A STUDY OF THE STRUCTURE AND PERFORMANCE OF THE
REAL ESTATE DEVELOPMENT INDUSTRY IN HONG KONG**

**A DISSERTATION SUBMITTED TO THE FACULTY OF
ARCHITECTURE IN CANDIDACY FOR THE DEGREE OF
BACHELOR OF SCIENCE IN SURVEYING**

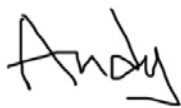
DEPARTMENT OF REAL ESTATE AND CONSTRUCTION

**BY
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**HONG KONG
APRIL 2008**

Declaration

I declare that this dissertation represents my own work, except where due acknowledgement is made, and that it has not been previously included in a thesis, dissertation or report submitted to this University or to any other information for a degree, diploma or other qualification.

Signed:  _____

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Date: 10th April 2008

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Abstract

Hong Kong is well-known as a “concrete jungle” for years with high-rise buildings found in most places, especially the urban districts. Large-scale and high-rise residential developments are one of the components of this city pattern. The rapid growing population in Hong Kong between 1970s and 1990s brought the evolution of this kind of development which can provide more shelter to meet the housing demand and ancillary and comprehensive facilities are often attached to the development. Also, there were concerns from the medium and small size developers that requested the government to put more small and medium size lots on the Application List or divide the large land lots into several smaller size lots, so that they can participate and promote competition in the property development market, since the market is known to be highly concentrated and possibly not contestable. Also, for years the private residential property industry in Hong Kong is always considered to be profitable. The Consumer Council 1996 report, “*How competitive is the private residential property market?*”, provided insights to investigate the economic structure of the property development market and its relationship to several socially-related aspects such as price level and the government policies. However, very little research investigates the linkage between the property development market structure to profitability of developers.

This study investigates the market structure of the private residential property development market during 1991-2006 as well as the developers’ market behavior in conducting large-scale developments in Hong Kong. It is found that the market is highly concentrated with few developers holding a large market share of new housing units and low contestability of the market is the result of the market structure. The government regulatory arrangements, either the land or housing policies, have systematically favoured the large developers and helped them to maintain their market shares. Also, the market behavior of large developers in

pricing, marketing and development strategies established entry barriers to the market which reduced the incentive of potential entrants and differentiated them from small developers. Therefore, the large developers were able to sustain large market shares and maintain their market power in the private residential property market, and a significant ANOVA result for the relationship between market share and profitability was identified.

Government, developers and interested investors should take into account the mentioned market structure when they are making decisions in either policies implementation or investment activities.

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Chapter 1

Introduction

1.1. Background

Hong Kong is one of the most densely populated cities in the world, which occupies a total land area of 1,098 km² but 80% of the area are mountainous and hard to develop using conventional technologies. Moreover, with the increasing population currently approximated at 6.9 million, management of housing and land resources is a continuously critical issue for the Hong Kong government. It has two roles in the real estate market, the solely land supplier and public housing developers. As the consequence of the history, almost all lands in Hong Kong are owned by the government which can therefore control and influence the property market in different ways. In addition, the responsibility of the housing supply, besides the public housing provided by the government, is also shared by the private property developers.

Hong Kong real estate developers are renowned to be profitable for the past decades. It induced people's interest to explore why they are so profitable. Economists suggested the market structure of the real estate development industry do constitutes to this situation. Consumer Council, which wanted to find out if there is any discrimination to consumer in the property market, launched an investigation on the competition in the market in 1996 and found out the market is highly concentrated and not competitive which majority of market share are in the hand of those large developers with lack of threat from potential market entrants. It claimed that the marketing strategies of developers and the nature of the private housing market are the roots of this structure. Also, the relationship of the market share and profitability of the developers was addressed in the report and the council suggested the

government to impose policies aiming to reduce the entry barriers. Though the investigation finds no conclusive evidence on the availability of economic profits to the developers, it paved a way for researchers to investigate the property development industry.

Diverse views on the competition of the market were raised and they also look at the influence of the government land and housing policies and the developers' behavior to the property development market so as to address its contestability, which investigate if the market structure established a barrier for entrants to enter and exit the market.

Also, concerning the land disposal system, the medium and small developers demanded the government to divide the large land lots into several small and medium size lots so that they can afford to participate in the auction, since it is noticed that those large developers usually win the bid of those large land lots. Due to this reason, they suggested that those large developers can dominate both the land and private residential property market as they can develop large-scale development on their lands. However, researchers suggested that it is nonsense that the huge auctioned lot sizes favor the well-capitalized developers. Therefore, it is worth to find out whether large-scale developments favor the large developers and affect the market structure.

The overall aim of this dissertation is to present an analysis of the market structure of the private residential property market, as well as the behavior of large developers in developing large-scale developments in Hong Kong and the government regulatory arrangements, to assess its relationship to the developers' profitability. It is hoped that the study will provide society, developers and government with insights into the market and facilitate better decisions in either business strategies or government policies.

1.2. Objectives

The objectives of this dissertation are as follows:

- To analyse the structure of the private residential property development industry in Hong Kong
- To investigate the economic reasons for developers to prefer development of large-scale developments; and
- To examine the relationship between market share and profitability of the developers.

1.3. Methodology and Data

The study is divided into two parts. The first part presents a background analysis on the private residential property development market, of which the market situation in term of concentration, demand and supply, the competition and contestability are discussed and analyzed. Journals, books and the published secondary source of data relating to new land and housing supply as well as the government regulatory policies regarding these aspects will be studied.

The second part of the study identifies the relationship between market share and the developers' profitability, with reference to the previous literatures and analysis concerning the market structure. Developers' respective market shares are based on their annual supply of the new residential units among the analyzed developers. Moreover, Return on Assets (ROA) will be adopted as the developers' profitability rate and of which together with the market share can be gathered from the listed company annual reports. A One-way ANOVA analysis is conducted to examine the mentioned relationship. The results are presented and analyzed.

1.4. Structure of the Study

The framework of this study is divided into six chapters. This introduction chapter is followed by a chapter of theoretical reviews, Chapter 2, in which the previous theoretical studies related to this study are illustrated. It will include concepts and theories in industrial economics including market concentration, barriers to entry, contestability. Also, the relevant theoretical and empirical studies to the relationship of market share and profitability will be discussed in the chapter.

Chapter 3 gives an overview together with an in-depth analysis to the private residential property development market in Hong Kong. This offers the readers a general understanding to the background, performance as well as the market structure of the private housing market in Hong Kong. In addition, certain kinds of regulatory arrangement related to the private residential market and the developers' behavior will also be studied so as to analyze its influence to the market structure.

In Chapter 4, the propositions and methodology of this study are put forward and illustrated in detail to show the rationale of the dissertation and the analysis method. Moreover, the empirical model, variables and data used for the analysis will be specified and explained and also the expectations of the empirical results and the detailed steps in achieving the results will also be included.

Chapter 5 will then show the empirical results of this study. Analysis and implications of the findings will be discussed. Finally, the main findings and observations in this study, together with the limitations and further study areas of this study will be concluded in Chapter 6.

Chapter 2

Theoretical Reviews

2.1. Introduction

This dissertation investigates the rationale for the Hong Kong private residential developers to develop large-scale developments. Before analysis, it is important to review the basic economic foundation and related definitions and theories that are being offered to explain the situation. In this chapter, literatures will be reviewed to develop the ground work with those supported economic theories for the relationship between market share and profitability, which was first introduced by the industrial economics institutions and later on gained supports with three mainstream theories. However, some researchers do not agree with the mentioned relationship and raised several criticisms towards the mainstream theories which will also be included in this chapter.

Right before that, many economists developed models to analysis the market structure and market behavior, therefore, factors affecting the market structure and behavior can be identified and they are important and essential to the discussion in the later chapter which will focus on the Hong Kong private residential development industry. Therefore, theoretical structure of the housing market will be discussed too. Moreover, most of those models are founded by the original thought of Industrial Organization Economics. Ideas like oligopolistic competition, nature of barrier to entry, contestability as well as the necessity of including government actions when analyzing a market were pointed out by economists and all these will be discussed in the following sections.

2.2. Industrial Economics

Industrial economics was developed from the Theory of Firm. It comprised of the analysis of different market structures and its implications for economic welfare. It concerns the economic aspects of firms' behavior, market structure, costs and competition.

According to Hay & Morris (1991), the theory of firm as suggested by Adam Smith, in *Wealth of Nations*, the forces of competition would drive the market price into equality with the natural price (which is the same as the cost). However, there are deviations between the market price and natural price, he concluded that if one product commanded a higher market price than another it was because of the higher costs of the factors of production required to produce it. Marshall in 1890 pointed out the idea that value was independent of market price and was determined by both supply and demand equally. Also, he retained the view that competition generally ensured the equality of price with unit costs of production and the firm in the position of monopoly was generally temporary. Obviously, their works were based on the presumption on the characteristics in perfect competition which is the independence of buyers and sellers as well as the information about transactions.

Jevons and Edgeworth established the condition that equating price and average cost and the absence of monopoly profits would follow. Knight refined the Perfection Competition model and identified a long list of necessary conditions for the elimination of supernormal profits at minimum average cost. He also applied the marginal analysis to the case that discussed by Marshall in monopoly, the absence of competition. However, the mentioned economists' approach, from deductive school based on the precise assumptions, had little concern with the general and abstract principle of the economic behavior and also the empirical data. Therefore, there was a gap between the theoretical analysis and the actual general principle, thus the

observed and specific economic behavior cannot be explained. Afterwards, there was a deep division between the deductive school and empirical school.

The empirical school studied the behavior of one or more industries in the descriptive level. It covers the lives of the dominant personalities, the organizational structure, the history of the firms' product development and their activities. Profits and efficiency were also covered, but resource allocation and welfare was not. However, the studies were little rigor and had few generalized conclusions. Chamberlin filled the gap between the two schools. He focused on the product differentiation and downward-sloping demand curve and proposed the theory of monopolistic competition which began to pay attention to the individual firm rather than the industry and become a mainstream of the microeconomic theory. Chamberlin's belief but then criticized and attacks on his model were numerous, and the monopolistic competition model failed in both theoretically and empirically. Nevertheless, it paved a way for the development of current industrial economics. He provided a basis for Mason and Bain to generate the empirically testable hypotheses about the structure-performance relationship (Fig 2.1). Also, the central role of new entry into an industry and the barriers facing potential entrants was brought out by Chamberlin which later on Bain (1956) studied and demonstrated its significance. He also catalyzed the development of oligopoly theory which took into account of the rivals reactions and fewness of firm in the market.



Figure 2.1 Bain's S-C-P model

Also, economists utilized the industry-based theory developed in the industrial economics to analyze the industry and develop business strategy. Porter (1980) mentioned that if superior

financial performance results primarily from industry factors, choosing the industries in which to compete and/or altering the structure of chosen industries to increase monopoly power should be the focus of strategy (Hunt, 2000). Montgomery and Porter (1991 cited in Hunt 2000) mentioned that researches, such as Schmalensee (1985), had continued to affirm the important role industry conditions play in the performance of individual firms. And they supported the notion that the industry analysis should play a vital role in strategy formation as recent studies had repeatedly shown average industry profitability is the most significant predictor of firm performance.

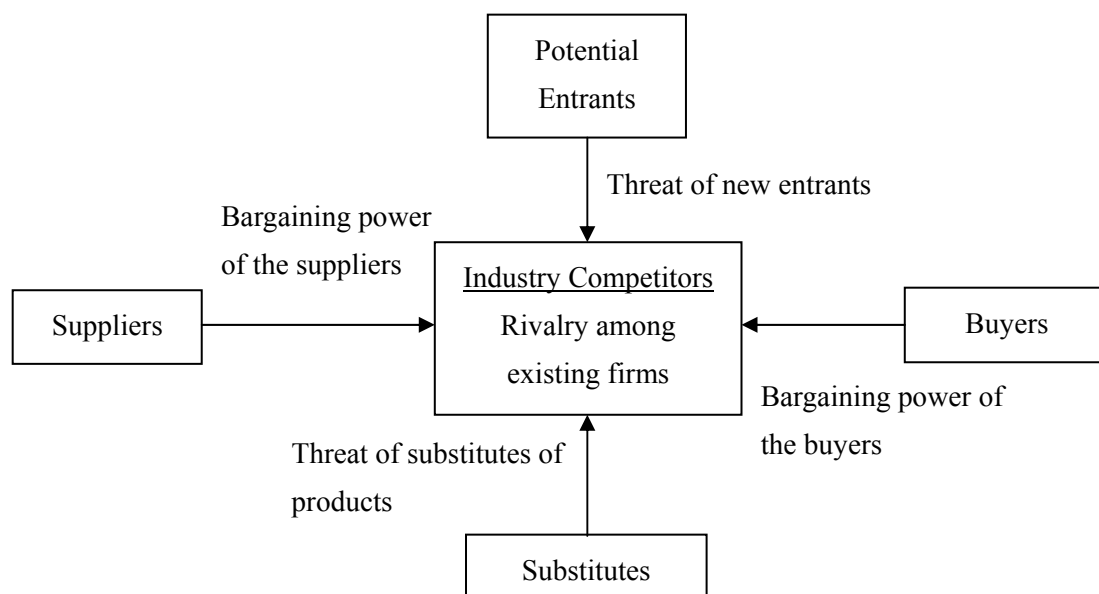


Figure 2.2 Porter Five Forces Framework

Besides Bain's SCP paradigm, Porter (1980) also suggested the similar model (Fig. 2.2) which is the "five forces" framework to analysis the market behavior. It suggested that the profitability of a firm in an industry is determined by (1) the threat of new entrants to the industry, (2) the threat of substitute products or services, (3) the bargaining power of its supplier, (4) the bargaining power of its customers, and (5) the intensity of rivalry amongst its existing competitors. The first two forces constitute industry competition, which continually works to drive down the rate of return on invested capital toward the competitive floor rate of

return, or the return that would be earned by economist's 'perfect competitive' industry. However, because a firm is not a prisoner of its industry's structure, it will implement strategies aim at altering industry structure by raising barriers to entry and increasing its bargaining power over suppliers and customers. Therefore, for the later section, the concepts of barriers to entry will be discussed.

2.3. Oligopolistic Competition

From the elementary theory the economic performance to expect from two market structures: perfect competition leads to an optimum performance while monopoly leads to distortions. However, most observed industrial structures, however, are oligopolistic. Oligopoly is a market dominated by a small number of providers and firms operate under imperfect competition. The firms offer differentiated products and barriers to entry are strong. Often, an oligopoly is defined as an industry or market in which the top four businesses have a concentration ratio above 40 per cent. Industrial economists have accordingly tried to model such competition. Cournot's duopoly model and Bertrand's model are two significant models to model the behavior of oligopolies. However, there are differences between the two models. In Cournot's duopoly, the firms are deemed to be quantity-makers while in Bertrand's oligopoly, the firms are deemed to be price-takers.

For the Cournot's model (Fig 2.3), it assumed that the each firm select its output volume and believes that its rival will not change its output and respond to its own decisions at all. Therefore, it suggested that oligopoly shares in the sins of monopoly to some degree where buyers are overcharged and undersupplied to an extent determined by the level of concentration in the industry. This provided a basis for much early work in industrial economics and the testing of relationships between structure and profits.

However, if oligopolists behave like those in Bertrand's model (Fig 2.4), Cournot's prediction can be dismissed as baseless as the incumbents engage in ferocious price warfare. And the result is that the industry has prices, output and profits which are the same as under perfect competition.

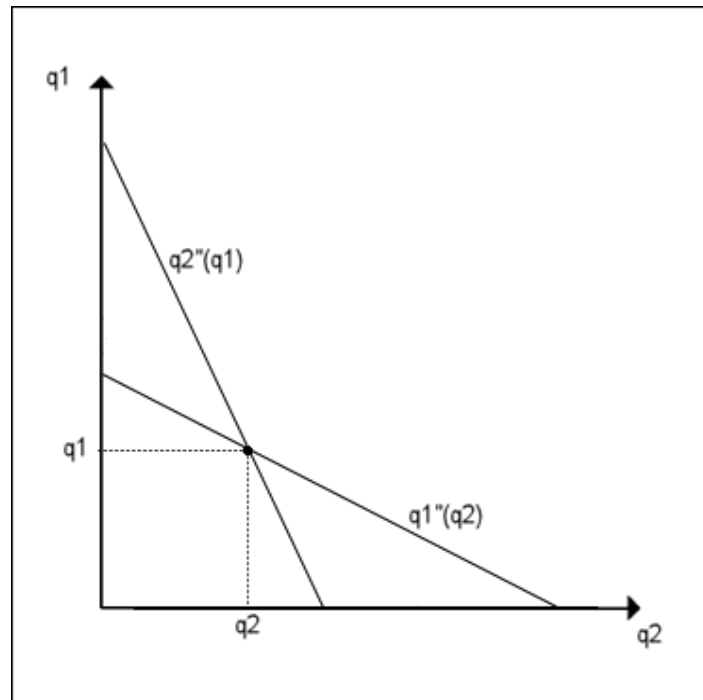


Figure 2.3 Cournot's duopoly model

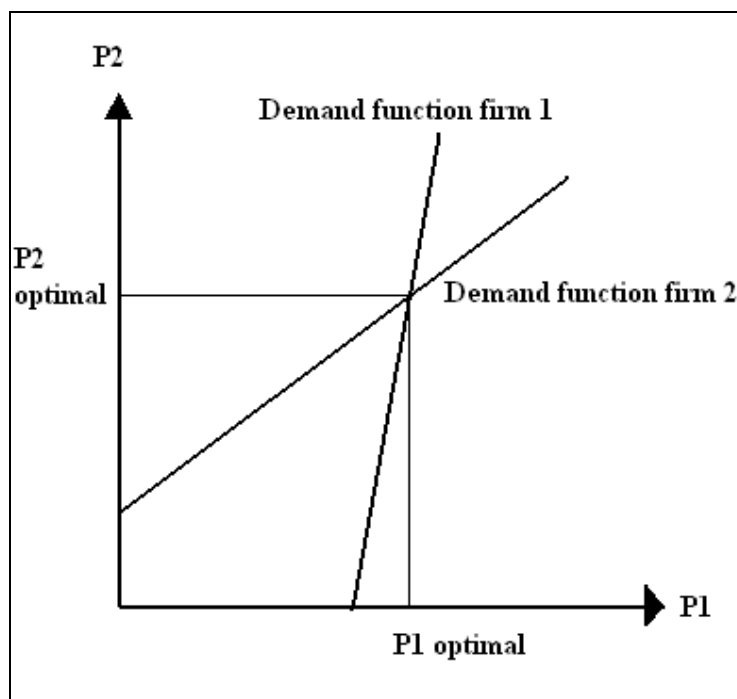


Figure 2.4 Bertrand's model

2.4. Theoretical nature of the residential property market

Before looking at the market structure of the Hong Kong private residential market, we should first understand the theoretical nature of the residential market together with those economic literatures concerning the nature of competition.

2.4.1. Perfect Competition in the Housing market

Maclennan (1982) identified nine assumptions for the housing market followed the neo-classical economics theory:

- (a) There are many buyers and sellers.
- (b) In relation to the aggregate volume of transactions, the sales and purchases of each household are insignificant.
- (c) There is no collusion amongst or between buyers or sellers.
- (d) There is free entry into and exit from the market for both consumers and producers.
- (e) Consumers have continuous, transitive and established preferences over a wide range of alternative choices of housing and no-housing goods.
- (f) Consumers and producers possess both knowledge with respect to prevailing prices and current bids and perfect foresight with respect to future prices and future bids.
- (g) Consumers maximize total utility whilst producers maximize total profits.
- (h) There are no artificial (non-price) restrictions placed on the demands for suppliers and prices of housing service and resources used to produce housing service.
- (i) The market is assumed to be in equilibrium.

According to this framework, economists view the market as the natural one and the invisible hand of the price mechanism will organize the production and exchange itself.

2.4.2. The Modern Real Estate Paradigm and the Fisher-DiPasquale -Wheaton (FDW) model

As discussed before, the housing market is assumed to be perfectly competitive. One of the modern real estate paradigm, Fisher-DiPasquale-Wheaton (FDW) model, is also constructed based on this assumption. The FDW model provides insight to identify the factors affecting the market structure and to what extent those factors are affecting the structure. It is generated from the economic principles applied to capital goods, including real estate assets. The use of the model required to consider a range of important structural and dynamic factors for the analysis of a particular market.

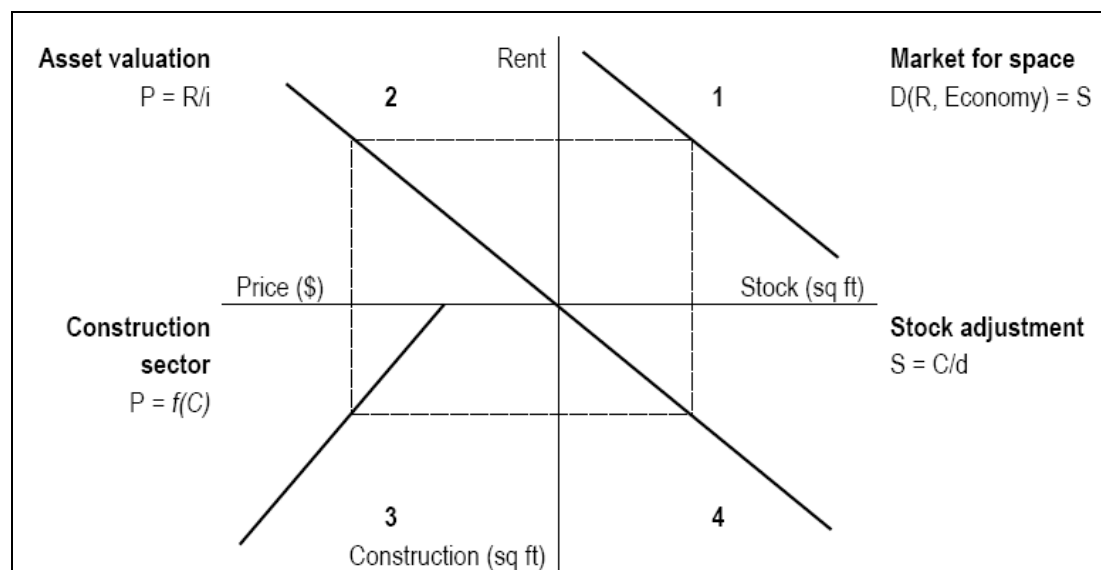


Figure 2.5 The Quadrant FDW Model

The FDW model consists of four building blocks (Fig 2.5) and form one multi-directional framework showing the relationship between common variables in different processes. It can be used to analyze the stock-flow relationship of the housing market. First, it is based on the nature of price equilibrium in housing markets. The model assumes that housing supply is fixed in the short run, and the price of housing services is determined by housing supply and

demand. And then, the equilibrium price is the market rent. In turn, the market rent and the discount rate, that shows the opportunity cost of new land and expectations of future growth, determine the price of housing stock, and the price of housing stock and construction costs jointly determine the number of housing starts (Smith 1974, 1988). Housing starts represent the change in the stock of housing, net of removals. The new housing supply through the flow market should adjust to eliminate the shortage or surplus in the stock market to reach the overall equilibrium.

In the theoretical literature, development occurs instantly to meet the changing housing market equilibrium. However, in reality due to the incomplete information on the housing market, there are delays in developing land from non-urban uses and then in constructing residential units on these lots. The adjustment in new housing supply may not perfectly match the shortage or surplus in the housing market. Therefore, the adjustment exhibits a continuous and dynamic process. And also, with these delays, developers are necessary to forecast demand of several periods in advance of their expected completion dates.

2.4.3. Critics to the assumption of perfect competition

However, the reality is not the same as what the theory suggested. Whitehead (1974) conducted an econometric study for the United Kingdom housing market. She claimed that the housing market is inherently imperfect, but she noted that the nature and extent of such imperfections is difficult to be measured since purchasers routinely trade off different attributes of the housing unit, such as size, type, location and price. As mention before, she pointed out that the supply of housing cannot increase rapidly and there are lags in supply because new buildings usually account for only a small portion of the total housing stock. Lastly, she mentioned that governments intervene in housing markets in many ways, and

these should be taken into account when analyzing the market.

Barlow and Duncan (1994 cited in Yam 2002) stated that markets are normally inefficient in three ways. First, 'productive efficiency', where the production of a commodity at the minimum possible cost cannot be achieved, therefore, resources are wasted. Second, 'allocative efficiency', where consumer wants are met as effectively as possible, cannot be reached. Third, it is highly unlikely that 'dynamic efficiency', where firms and economies plan, innovate and develop for the maximum efficiency over the long term, can ever be possible in free market systems.

Therefore, the conventional economics, which regards the market as an optimized and distinct one, is unlikely to reflect the realities of the housing market. And the reality of the housing market is a socially created and sub-optimal market institution that is supported and maintained by organizational structures including government action.

2.5. Barriers to entry

The term "barriers to entry" first appear in Chamberlin (1933) journal, that "Competitive measures which did not truly measure efficiency should be eliminated; and, by implication at least, any other barriers to free entry except those inherent in differing personal qualities or ability to obtain capital should be removed". And later Bain, in order to support his claims, carried out some measurement for a cross-section of twenty industries, and found that the size and importance of the market characteristics that he believed have an important effect on the condition of entry. And his definition is now commonly used to be the source of many productive researches on the entry barriers. However, there are still controversies over the definition of "barriers to entry". Bain's barrier is classified as exogenous sources of barriers which are embedded in the underlying conditions of the market. The other sources of barriers

are the endogenous sources which are depend on the firm's own discretion. Porter's concept of mobility barriers recognizes this point.

2.5.1. Bain's barriers to entry

According to Bain's definition, a barrier to entry is anything that allows incumbent firms to earn above-normal profits without the threat of entry. He classified the barriers to entry in the following three groups, i) Economies of scale, ii) Absolute cost advantages and iii) Product differentiation advantages.

2.5.1.1. Economies of scale

If low-cost production requires a large scale of output, then new firm attempting to enter a market currently occupied by one or more incumbents faces the choice of producing a small amount at a substantial cost disadvantage or producing efficiently at large output, thereby swamping the market and driving the prevailing product price down. Either strategy might well be unprofitable, so economies of scale may discourage new firms from attempting entry. In that case incumbent firms will be protected from competition, which in turn may lead to monopoly distortions.

2.5.1.2. Absolute cost advantages

It arises from reputation, superior production techniques (either as a result of past experience, patented or secret processes, or from control of particular inputs required for production, be it materials, labor, management skills, or equipment), and from access to cheaper funds because existing firms represent lower risks than new ones.

2.5.1.3. Product differentiation advantages

It implies something unique about the product, that it has an attribute others do not share and cause buyers to prefer the product of one firm over that of a rival firm. Product differentiation may occur in terms of physical appearance, features, durability, ancillary services, image and geographic location. It affects the degree of substitutability between products and in turn the constellation of demand and supply.

2.5.2. Stigler's Critics on Bain's definitions

Stigler (1968), however, rejected the notion that scale economies and capital requirements are barriers to entry. He defined a barrier to entry as a cost that must be borne by a firm that seeks to enter an industry but is not borne by firms already in the industry. As he suggested, with equal access to technology, economies of scale are not a barrier to entry and capital requirements are not a barrier to entry either unless the incumbent never paid them.

2.5.3. Baumol's contestable markets

Baumol (1982) pointed out that the condition of free entry should not be taken to imply that it is costless or easy to enter, but rather that the "entrant suffers no disadvantage in terms of production technique or perceived product quality relative to the incumbent." This can express in way of an absence of sunk costs. If such costs exist, then they may place entrants at a competitive disadvantage, and if so then they can be a barrier to entry. Therefore, barrier to entry must be something that interferes with competition or, specifically, the competitive process (Fisher 1987). It follows that not everything that makes entry appear difficult or uninviting is necessarily a barrier to entry. A barrier to entry should permit an incumbent to

earn supernormal profits continuously without inducing others to enter and bid those profits away. Also, White (1987) interpreted barriers to entry are costs that entrants have to bear irrespective of whether incumbents have borne them too. Therefore, under a contestable market, entrants can match all advantages of all existing firms with no costs or significant lags in entry. Also, sunk cost is zero which mean exit is perfectly free, at no sacrifice of any cost.

2.5.4. Conclusion for Barriers to entry

Although Bain's definition faced many criticisms, his definition is more commonly used to be the source of many productive researches on the entry barriers. And Baumol's contestable market theory has also taken Bain's ideas but in more thoughtful elaboration and therefore, his broader definition will be adopted in this dissertation.

In addition to Bain's three sources of entry barrier, the government policies may also act as one of them. Some industries are protected by government limits, requirements and other restraints. And Porter (1980) stated that the government policies affect the structural condition of an industry. Therefore, a structural analysis should be included a diagnosis of how present and future government policy at all level.

2.5.5. Porter's mobility barrier

Porter (1980) recognized entry barriers arises not only to protect firms in strategic group from entry by firms outside the industry, they also provide barrier to shifting of strategic position from one strategic group to another. "Mobility barrier", a kind of entry barriers, means the factors that deter the movement of firms from one strategic position to another. Mobility

barrier can be used to explain why some firms within the industry can be more profitable. Moreover, different strategic group carry different level of mobility barriers which provide advantage over other strategic group and generally, the higher the mobility barrier, the greater the profit. It is very important for mobility barrier to maintain for firms to sustain their competitive position.

2.6. Relationship between market share and profitability

Market share means the percentage share of the market's total sales revenue. It can also be expressed as a company's unit sales volume in a market divided by the total volume of units sold in that market. According to Drew and Skitmore (1993) and Shepherd (2004), they defined it as is a measure of success and regards it as the most important indicator of a firm's degree of monopoly power. Higher market shares always provide higher monopoly power, while low shares involve little or none.

Business planning strategy provides the firms opportunity to have an insight towards the competitive environment and locate themselves in a right position within the market in order to achieve the best performance possible. Within numerous of analysis approach, the growth-share matrix provide the firm to identify their products growth potential with respect to the firm market share. From this matrix, it shows a close relationship between the market share and profitability and is supported by several economic theories.

2.6.1. Growth-share matrix

Growth-share matrix (Fig 2.6), which also called BCG matrix, is a chart that had been created by Henderson (1979) for the Boston Consulting Group (BCG) to provide a framework or an

analytical tool to help corporations to analyze their products or business units in order to structure the business strategy. It helps the company to allocate their resources appropriate to achieve better financial performance.

According to Abell and Hammond (1979), the growth-share matrix is assigned on the basis of the product's market growth rate and market share relative to competition. "The differences in growth potential, relative market share, and hence cash flow potential, unique to each product, determines which products represent investment opportunities, which should supply investment funds, and which should be candidates for elimination from the portfolio. The objective is to get the best overall performance from the portfolio, while keeping cash flow in balance."

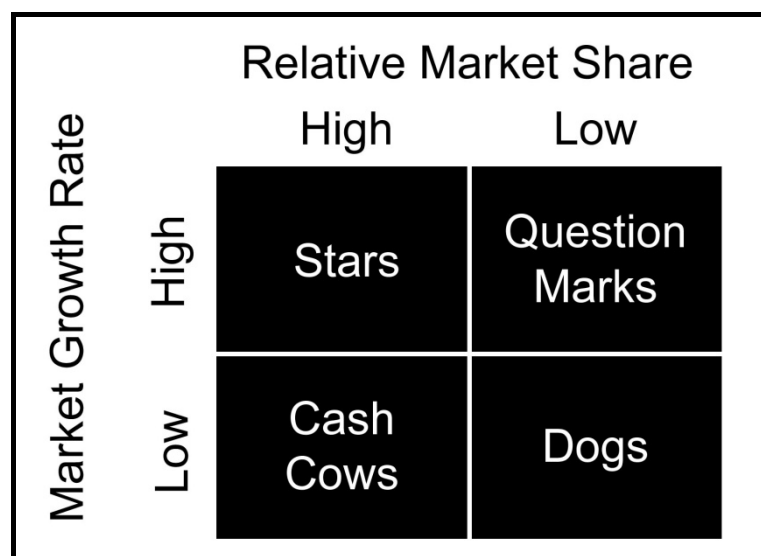


Figure 2.6 Growth-share matrix

Relative market share is the ratio of the firm's unit sales of a product to the unit sales of the same product by the firm's largest competitor. A ratio of 1.0 means the firm is tied for the lead and high share signifies market leadership. Since relative share is so closely related to related to relative experience, relative share is indicative of relative cost. The matrix divided into four quadrants, products or firms fall within each quadrant carry different meanings.

1. Lower left (Cash Cows): They have a dominant share of slowly growing markets and generate large amount of cash which is far more than they can profitably invest.
2. Lower right (Dogs): They have low share of slowly growing markets and neither generate nor require significant amounts of cash. Because of low share their profitability is poor. Maintain the share need additional reinvestment.
3. Upper right (Question Marks): They have low share of fast-growing markets. Since their low share often means low profits and weak cash flow from operation, large amounts of cash is required to maintain the share in the rapidly growing markets.
4. Upper left (Stars): They are high-growth high-share products which may or may not be self-sufficient in cash flow. This depends on whether their strong cash flow from operations is sufficient to finance rapid growth.

The matrix emphasizes the close relationship between market share and profitability. It assumed high market share firm can yield high profit and vice versa. And the shifting from one quadrant to another affects the cash flow. Cash is needed in sustaining the product growth and capturing more market share. Therefore, the most profitable location is the lower left, a high-share low growth markets (Cash cows). To summarize, the growth-share matrix actually hypothesized that both market share and market growth determine the profitability which is based on the theories discussed in the following sections.

2.6.2. Industrial Organization Economics Origins

Early research in industrial organization economics postulated the concentration - profitability relationship. Bain (1951) proposed the idea of more concentrated industries should show higher profits than those with a lower concentration. Concentrated industry means that large proportions of outs are in the hands of small numbers of sellers within the industry. The

relationship between market structure and profit performance can refer to the structure-conduct-performance (SCP) paradigm which posits that industry structure variables such as concentration influence the firm's strategy (Conduct) to finally influence its performance. The reasons he gave are related to oligopolistic coordination and the barriers to entry which means that the firm strives to control the output in the market by collusion to drive up prices and profits and exercise monopoly power. As the result, more concentrated industries are expected to be more profitable (concentration-profitability doctrine).

2.6.3. Direct effect of market share on profitability

After Bain's concentration-profitability doctrine, which is focused on the industry level, Shepherd (1972) expressed that the superior performance of the firm is actually related to its market share, and pointed out that collusion is not necessary in this case since firms can achieve higher market share whereas they cannot collude in the reality.

Buzzell et al (1975) from his Profit Impact of Marketing Strategy which addresses how each factor is related to performance and he weighted them according to their relative importance in the total equation. He found out that achieving high market share is considered by many to be a principal criterion of success in the market place. He then, in his other work with Gale (1987), explained that higher market share lead to greater profits because of the market power and lower costs resulting from scale effects and learning effects.

Many studies were carried out to explain and test the relationship between market share and profitability. And generally three mainstream theories have been raised to provide a ground to the relationship.

2.6.3.1. Efficiency Theory

Demsetz (1973) pointed out the cost efficiencies for firms with high market shares lead to greater profitability. Day and Montgomery (1983) suggested the efficiency theory, it predicted businesses with large market shares are more cost efficient due to the experience curve and scale effects which finally lead to greater profitability.

2.6.3.1.1. Experience curve

Learning curve (Fig 2.7), the relationship between labour costs and cumulative production, was first introduced in 1930s before experience curve. It observed there is a systematic decline in the number of labour hours required to produce an airplane. Later, the Boston Consulting Group (BCG) generalized the learning effect in 1960s and included all value-added costs fall as cumulative volume of a product increase. The relationship between costs and experience was called that experience curve. (BCG 1972 cited in Abell & Hammond 1979)

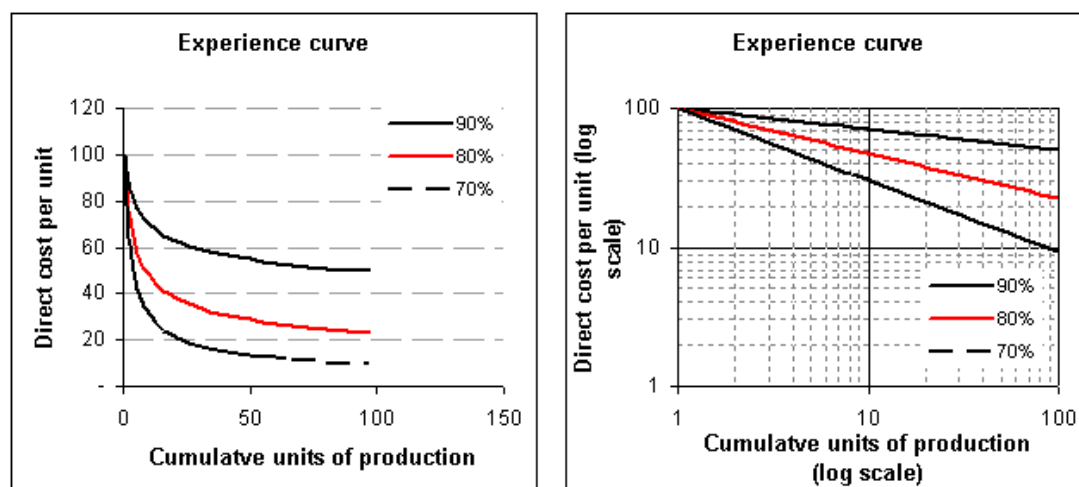


Figure 2.7 Experience Curve

As suggested by Day and Montgomery (1983), there are three major sources of the experience curve effect, which are the evidence to support the existence of the effect. They are 1) Learning by doing, 2) Technological advances and 3) Scale effect.

Learning helps increasing in efficiency of all aspects of labour input as a result of practice and the exercise of ingenuity, skill and increased dexterity in repetitive activities. It also encompasses the improvement of the working methods and specialization. Performance from production equipment can also improve since the staffs may find new ways to increase its output and more familiar with their operation.

Technological improvement includes the new production process. It is an important source of cost reduction especially in capital intensive industries. Change in the resource mix, product standardization and redesign are also sources of the experience effect.

The scale effect comes from the capitalizing on the size of an operation. It applies to the majority of investment and operating costs. Economies of scale enable the reduction in production cost. Some experts would include scale as part of the experience effect. Also, the economies of scale can also act as entry barrier since the cost disadvantage deter the new entrants from entering the market if they expect they will not able to obtain a certain magnitude of output.

2.6.3.2. Market Power Theory

The market power theory is proposed by Schroeter (1988) and Staten et al (1988), they explained that firm with high market shares is hypothesized to have market power, because their size and importance in the market enable them to obtain inputs at lower costs, extract

concessions from channel members and set prices rather than being a price taker. Also, Shepherd (2004) defined it as the indicator of a firm's degree of monopoly power in an ordinal sense.

2.6.3.3. Product Quality Assessment Theory

One more ground to support the link between market share and profitability is given by Smallwood and Conlisk (1979), they proposed the product quality assessment theory, they contend that the widespread acceptance of brand provides information to those potential customers that it is superior in quality than the lower share brands. And thus, a high market share brand can provide a level of customer confidence which cannot be achieved by low share brands under an uncertain and imperfect information environment about the product performance. As a result, high share brands can set a higher price and receive a superior return, return premium relative to low share brands. PIMS data also indicate an additional explanation that firms with the high shares tend to have products of higher quality and to spend much more on R&D than smaller share firms. They receive higher prices for distinctive, high-quality and often innovative products (Abell and Hammond 1979).

2.7. Previous empirical studies on the relationship between market share and profitability

Phillips et al (1983) found that market share affects return directly, and also has an indirect effect through the reduction of costs.

Prescott et al (1986) considered a series of "Conduct variables" (e.g. capacity utilization, relative price, relative quality) under different environments (e.g. mature, declining, emerging)

which are hypothesized to be associated with both market share and profitability. Although they argue that the market share-profitability relationship is contingent on the environment and that significant spurious effects are present, they found significant direct effects.

A subsequent study (Venkatraman & Prescott 1990) examined a different time period with distinct economic conditions, and confirmed the direct effects reported by Prescott et al (1986), although the size of the direct effects changed in several environments.

However, some studies rejected the statement made by Buzzell. Hergert (1984) found that the relationship between market share and profitability is not strong enough when he used return on assets (ROA), which is regressed against market share on some 5400 business and 76 industries. The results were insignificant that only a third of the industries gave the positive results. The winner's curse phenomenon also explains the negative relationship between market share and profitability since the winner accepts the price that is unacceptable to all other competitors.

Fraering and Minor (1994) also argued the relationship between market share and profitability is 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 are possible under a severely limited set of circumstances. The few industries included home building and shoe manufacturing which were found to have the strongest positive link between market share and profitability. Therefore, they concluded that firms should not only rely on the pursuit of market share, but also on alternative strategic goals, to strive for increasing return on assets.

2.7.1. Critics towards the Market share-Profitability Relationship

Despite the relationship of market share and profitability has been supported theoretical and empirically, some economists do not agree with the notion and their stands and evidences are going to be discussed in this section.

2.7.1.1. Efficiency Theory and experience curve

Schmalensee (1987) stated that most studies of scale economies concluded that U.S. manufacturing firms generally need relatively small market share to be at the minimum efficient scale. Also, it is not guarantee that experience will lead to the cost reduction. It cannot be achieved by natural inclination. Indeed it just provides the management with the opportunity to exploit.

Moreover, scale effect may not necessary be the source of the experience effect. Porter (1979) supported this argument when cost reductions are being achieved primarily from economies of scale through more efficient, automated facilities and vertical integration, then cumulative experience may be unimportant to the relative cost position.

2.7.1.2. Market Power Theory

Fisher, McGowan and Greenwood (1983) pointed out that it is not a must that monopoly power can be achieved by high market share. They also stated that “when either potential or current competitors can expand readily, a firm does not have market power even if it has a market share much larger than its rivals”. Furthermore, competition for market share is extremely intense. Therefore, large share firm will have more at risk and are sometimes

forced into concessions to keep their position and power.

2.7.1.3. Product Quality Assessment Theory

Porter (1980) suggested that high quality image often requires a perception of exclusivity that is incompatible with high market share. Increase in market share makes the feeling of exclusivity diminish. Also, Jacobson (1988) stated that market share will not create comparative advantage when there is little uncertainty about the product performance or they rely on other indicators to know the product quality.

2.8. Conclusion

This chapter presented a review of literature regarding studies of industrial economics as well as classical competition nature in housing economics. As Bain's structure-conduct-performance (SCP) paradigm has provided an insight to understand the underlying principles to look at an industry, which suggested the implication that the profitability of firms is influenced by the conditions of the market structure. The important concepts of barrier to entry have been discussed and Bain's definition will be adopted in this dissertation, which is anything that allows incumbent firms to earn above-normal profits without the threat of entry. Economies of scale, absolute cost advantages and product differentiation advantage are the principal properties for the entry barriers. Moreover, it is notable that government policy may sometimes set up the barrier towards the new entrants to enter the industry.

The relationship between market share and profitability has also been discussed. The argument, that there is a positive relationship between these two parameters, is supported by three mainstream theories: efficiency theory, market power theory and product quality

assessment theory. However, this argument is still challenge by many criticisms. It will be interested to conduct a research for the real estate market to see whether the argument is applicable or not. After familiar with those economics theories, in the next chapter, the market structure of the Hong Kong private residential property development market will be discussed.

Chapter 3

Hong Kong Private Residential Property Development

Market Structure

3.1. Introduction

The magazine Business Week published its annual “Global 1000” surveys (Figure 3.1) in July each year. It lists out the world’s largest firms in terms of market value by country and industry. In 2000, Hong Kong had the largest and most profitable property firm in the world. And because of these brilliant records made by the Hong Kong top-tier developers, the society begins to investigate the nature of the property development industry so as to find out the reason why they are so profitable.

Hong Kong residential market is unique in several aspects: restricted land supply, high price volatility, high appreciation rate, a small group of large developers and a huge public housing sector (Lai & Wang 1999).

As the main focus of this dissertation is on the private residential property development market in Hong Kong, in this chapter, we will go deep into its structure. According to Shepherd (2004), the internal structure of a market is embodied mainly in the size distribution of its competing firms which consists of three main elements namely market share, concentration and entry barrier.

In addition, though it is found that literatures offer little analysis of the property development

industry. However, they provided insights for this study and have a better understanding to the market nature. Therefore, those literatures will be reviewed first. Moreover, as discussed in Chapter 2, there are several factors influencing the market structure, this chapter will focus on those aspects to look at the private residential property development market. Therefore the desk analysis will be shown afterwards to facilitate the discussion of the market structure. After that, the intensity of rivalry between the existing competitors and also the other special features of this market, especially the influence of the government land policies and the contestability, will also be investigated.

Figure 3.1 “Global 1000”

	2000	1999	1998	1997
Market value of all “Global 1000” firms (US \$ billion) (M)	23,943	19,699	16,625	13,249
<i>All real estate firms</i>				
Number	10	15	12	15
Market value (% of “M”)	0.4	0.6	0.5	1.2
<i>Real estate firms in Hong Kong</i>				
Number	3	5	4	7
Market value (% of “M”)	0.2	0.3	0.2	0.8
Market value (% of GE or MS)	8.1	14.5	12.7	50.6
Market value (% of all real estate firms)	44.3	47.6	39.4	61.2
Hong Kong rankings in “Global 1000 real estate” industry	1 (CK) 3 (SHK) 5 (HLD)	1 (SHK) 2 (CK) 4 (HLD) 9 (WH) 11 (NWD)	1 (CK) 2 (SHK) 7 (HLD) 11 (NWD)	1 (SHK) 2 (CK) 4 (HLD) 5 (NWD) 6 (WH) 12 (TSTP) 14 (SL)
<i>All “construction and housing” firms</i>				
Number	2	3	4	9
Market value (% of “M”)	0.1	0.1	0.1	0.3
<i>Largest “Global 1000” firm</i>				
Market value (US \$ billion)	GE 520	MS 407	GE 272	GE 198

Notes: Hong Kong real estate firms: CK = Cheung Kong Holdings; SHK = Sun Hung Kai Properties; HLD = Henderson Land Development; WH = Wharf (Holdings); NEW = New World Development; TSTP = Tsim Sha Tsui Properties; SL = Sino Land. Largest “Global 1000” firms: GE = General Electrics (USA); MS = Microsoft (USA)

Source: *Business Week*, 1997, 1998, 1999, 2000

(Source: Chiang et al 2002)

3.2. Demand

Lau (1992 cited in Lai & Wang 1999) suggests that Hong Kong is one of the most densely populated cities in the world. Strong demand for housing has been created from the reduction of household size. The decline in the average household size together with a significant increase in population means that there has been a strong demand for housing in Hong Kong during the period from 1970s to 1990s. Also, there is widespread speculation that the demand for housing in Hong Kong is not only for consumption, but also for investment, especially during the boom times (Lai & Wang 1999). Peng and Wheaton (1994) found that the housing demand in Hong Kong is price inelastic but income elastic. This means the change of demand for housing greatly depending on the people income level, however, the price level is not a significant factor in varying the demand. This can support that the bargaining power of the home buyers in Hong Kong is relative low.

3.3. Supply

As the supply side of the market is the focus of our study, in the following section, the in-depth investigation to its nature of competition and its contestability will be carried out.

3.3.1. Competition

Tracing back to one decade before, several research studies (Consumer Council 1996; Mui 1997) were carried out on the competitive environment in the Hong Kong property market because of the growing concern on the rapid increase in residential property price and the huge profit earned by those property developers for that period of time. A highly concentrated

and not competitive private residential property market was found and concluded that there is the relationship between market share and profitability, but few evidences have been shown to support this claim.

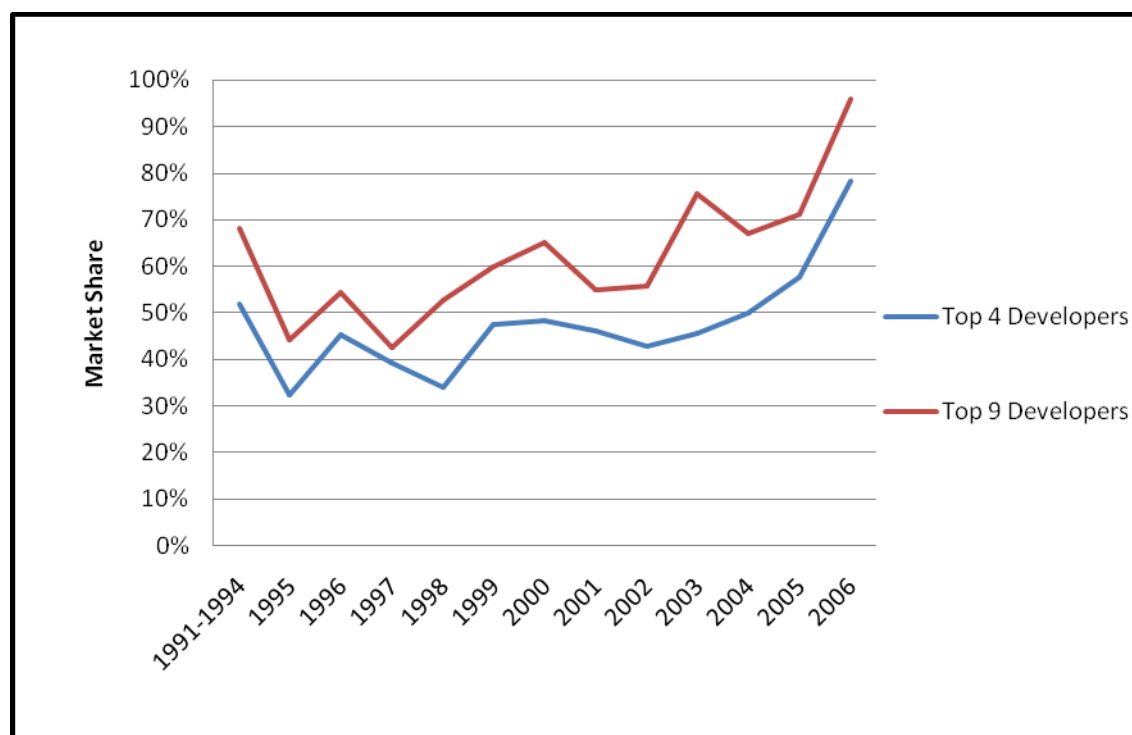
From the analysis of the market concentration, of which is measured by calculating the market share of the largest developers in Hong Kong in terms of their production of new housing units, the internal market structure can be observed. Table 3.1 shows the market share for each of the top nine residential developers for the period between 1991 and 2006. It is observed that 64% of the new housing units were produced by the top nine residential developers and the top 4 developers account for almost 50% of the market shares. Also, Figure 3.2 shows that a few major developers have held a consistently dominant market share.

For 2006, these developers contributed to 96% of the new housing units to the market.

Table 3.1 Market Concentration of all private residential units (By market share) in 1991-2006

Market Share among 9 developers	Sun Hung Kai	Cheung Kong	Henderson Land	Sino Land	New World Development	Hutchison Whampoa	Hang Lung Development	Wheelock Properties (HK) Limited	Kerry Properties Limited
1991-1994	10%	26%	10%	6%	4%	0%	9%	3%	0%
1995	13%	9%	10%	1%	2%	8%	0%	2%	0%
1996	18%	8%	18%	1%	4%	0%	4%	2%	0%
1997	23%	6%	6%	4%	3%	0%	0%	0%	0%
1998	13%	15%	2%	4%	6%	2%	2%	8%	1%
1999	15%	10%	20%	1%	2%	10%	0%	0%	1%
2000	16%	9%	19%	4%	10%	0%	2%	0%	4%
2001	18%	14%	5%	10%	5%	1%	0%	0%	4%
2002	26%	11%	4%	2%	1%	4%	3%	4%	1%
2003	9%	14%	16%	8%	4%	4%	11%	11%	0%
2004	20%	20%	0%	9%	4%	2%	7%	1%	4%
2005	22%	16%	20%	0%	9%	5%	0%	0%	0%
2006	35%	30%	9%	5%	4%	2%	0%	10%	0%
1991-2006	18%	15%	12%	5%	4%	3%	4%	3%	1%

(Source: Consumer Council (1996); Various Company Annual Reports; Property Reviews 1991-2006)

Figure 3.2 Aggregate Market Share, 1991-2006

(Source: Various Company Annual Reports)

From the above analysis, it is observed that the supply side of the private residential market was highly concentrated. In addition, according to the definition of oligopolistic competition, the private residential property development market can be described as oligopoly market. As mentioned by Wong (1993), the property market cycles tend to be fairly long and correct decisions made at a particular point in the property market cycle can give a developer a huge advantage to build a large market share that will be difficult for others to challenge until the next property cycle.

However, despite the apparent evidence of the high concentration of market shares in the industry, the above mentioned investigation finds no conclusive evidence on the availability of economic profits to the developers, but indeed shows there may have a lack of threat from potential market entrants (Fu & Ching 2001). Wong (1993) and Wong et al (1996) also argued

that the property market cannot be said not competitive solely due to its high concentration. However, they claimed there is the absence of artificial barriers in the property markets in Hong Kong. Clearly, there is discrepancy between researchers to define the barriers to entry for the market. As the report from Consumer Council (1996) has accounted for this problem, it mentioned that the government land policies and marketing strategies of the developers are the consequences lead to the mentioned market structure and the market power of the major developers since those policies and strategies created the entry barriers to the entrants. Therefore, the contestability test for the market will be carried out in the following section to examine whether the incumbents are lacking the threat from the potential market entrants.

And for the problem of market power, Wong et al (1996) as well as Lui (1997 cited in Fu & Ching 2001) rejected the notion that the large developers in Hong Kong can manipulate price and extract monopoly rent, since they alleged that new supply is unlikely to influence the price of dwellings in well-developed urban areas where new supply would be merely a small fraction of the total supply in the overall market. On the other hands, empirical study suggested the market power of the established developers cannot be constrained by the entrant firms and the secondary market is not a close substitute to the new housing market (Mui 1997). In addition, Ball (1999) suggested that the developers' behavior play a part for the high housing market volatility. The new housing, though, is a minority of total sales in the housing market, its role in affecting the rate of price change is probably greater as it is the main source of additional supply. Also, Fu and Ching (2001) suggested that the developers in Hong Kong can actually exercise their market power and they pointed out the reason why others treated the developers as the price taker is entirely because of the FDW model, which was discussed in Chapter 2 suggested that the demand for the new building space is perfectly elastic, with price determined by the demand for the building stock.

From the literatures reviewed, it is observed that there is no consensus on the question that whether the market is competitive enough or not. Therefore, the following sections are conducted to analyze the contestability of this market and find out the reasons for the existence of this highly concentrated market.

3.4. Contestability

Renaud et al (1997) mentioned that the barriers to entry into all real estate market sectors in Hong Kong are high and rising. Among these barriers are extremely high level of capital required to bid for land, the prevalence of capital intensive high-rise technologies, and the need to finance large and mix-use projects. As a result the real estate development industry has become highly concentrated, but there are also increasing pressures towards further concentration in the industry. Mui (1997) also agreed to the claims that the limited supply of land and the marketing strategies of the developers leads to cost disadvantage to the entrants.

As in a fully contestable market, all participants act in a fiercely competitive manner resulting in maximum efficiency with prices close to costs. Everyone is absolutely free for entry and costless to exit. That means the entrants need not incur any costs that are not incurred by the firm already inside the market. However, if the market is not contestable, there is no threat of new entrants to the market and high market concentration would be resulted, and there is also a risk of abuse of market power. In order to investigate how far it was contestable, two important aspects will be considered, which include: 1) accessibility to the land markets, as it is the indispensable resource to carry out property developments and 2) dominant developers' strategies, to see whether these aspects allow incumbent firms to earn above-normal profits without the threat of entry and place entrants at a competitive

disadvantage.

3.4.1. The Land Market in Hong Kong

Land is the indispensable resource for the property market and as mentioned before, it has a direct influence to the housing market. Fu and Ching (2001) argued that the market power of developers derives not from their monopoly in the market for building space but from their monopony in the market for developable land. The market for building space is thick and individual developers are unlikely to have influence on the market prices. In contrast, the market for developable land is thin and well-capitalized developers may well be able to influence the prices at which they procure their landholdings. They found that the developers are able to earn economic profits from land acquisition at public land auctions in Hong Kong due to the entry barriers. Such market power has important consequences for the housing and building costs and provides a disincentive for the developers to acquire and develop land at socially efficient level, thus reducing the elasticity of housing and building supply in Hong Kong.

However, Wong (1993) argued that since the land is supplied through public auctions or in the open market, therefore, it demonstrated that there is free entry. Also, the allegation for the huge auctioned lot sizes that favour well-capitalized developers are invalid as they explained that the small developers can still joining forces to bid for large lots and developing them together.

Therefore, it is necessary to investigate the situation of the land market so as to facilitate the analysis of the private residential property development market structure. First, sources of

land supply are going to be introduced. And then, as the government is the sole supplier of almost all the lands in Hong Kong, it can dominantly control the amount and time of land supply for housing development. Therefore, the following will look at how the government regulatory arrangement affects the private residential property development market, especially how those policies favour the large share developers.

3.4.1.1. Five channels of land disposal

The major sources of land for new housing developers are new towns, reclamation, as well as urban renewal and redevelopment. Since 80% of the 1092 square kilometers of land is mountainous, land supply in Hong Kong is very restricted. In 1997, around 60% of the population lived in only around 80 square kilometers of land that is extremely densely developed (Renaud et al 1997). As nearly all lands in Hong Kong are held under leasehold system, the government is the sole supplier of the new developable land. And the time and amount of new residential land for sale are solely decided by the Housing, Planning and Lands Bureau in each year, while the Lands Department will carry out the process by publishing the timetable for annual Land Sale Programme. Thereafter, the new land is usually leased out in three methods, i.e. public auction, public tender and private treaty grant. Besides the new developable land, developers can obtain land by redevelopment of existing lands or through the land exchange of Letter A/B entitlements before July 1997.

In public auction, the land lease is sold to the highest bidder and this method is the main source of government land disposal. And for public tender, it is mainly for those lands with restricted use or the sale is unlikely to attract general interest. Also for the place where the Government wishes to examine in advance detailed proposal for the development of a

particular lot, public tender will be carried out. In 1999, the Application System was introduced for the public auction. Under the system, the Lands Department will publish a list of sites available for sale upon application ('the Application List'). It contains information on lot number, location, use, site area, and the estimated earliest available date for each of the sites. Interested parties could then apply for the sale of the sites from the Lands Department with the indication of the "minimum price" that they are prepared to bid. If the "minimum price" is accepted, the particular sites will then be disposed through public auction or tender. The Application System is well accepted by many people in the private property market since it was introduced because it can give flexibility to the land sale programme by allowing the market to determine the timing, amount and type of land required in the territory (HPLB 2003). And since 2004, all the new land is only supplied through the Application system.

Government disposes land in the form of a private treaty grant (PTG) through a direct grant for specified purposes, only under exceptional circumstances when doing so is in line with established Government policies with justifications, and meets the economic, social and community needs.

Besides bidding the government disposal lands, developers can obtain lands by cumulatively purchasing the old buildings with redevelopment potential from the private sector. They can also jointly develop with the Land Development Corporation before 1999, which was reformed to Urban Renewal Authority since 1999. However, redevelopments is quite difficult to be carried out in Hong Kong since the acquisition of the land ownership rights is complicated, costly and time is required in order to acquire only a small land lot.

Also, developers can exchange lands through letters A/B entitlements, which were issued by

the Hong Kong Government between January 1960 and March 1983 as an alternative to cash compensation when private land was to be resumed in the New Town Development Areas of the New Territories. They are essentially a government promissory note in respect of a future grant of land. The terms of each Letter A/B document confer upon the holder an entitlement at an unspecified future date, to a grant of building land by exchange at the ratio specified in the document. However, all the outstanding commitments for Letters A/B would be cleared by June 1997, by 1995, the vast majority of the outstanding Letters A/B were in the hands of four major developers and in order to meet their deadline, the government negotiated directly with the big four developers and three land exchanges were executed in early 1997 which absorbed all their outstanding holdings amounted to about 1.5 million sq. ft.

Although there are numerous ways for developers to obtain developable lands, public auction is the most efficient method for developers which do not possess sufficient land banks. Also, as mentioned before, the public auction is open for all the developers, in the research by Tse, Hui and Chan (2001), but they found out that land market in Hong Kong is also highly concentrated, with a small group of companies dominating a large volume of land resources, the situation haven't changed even after the implementation of the Application System in 1999. However, their results come as a surprise that the leading property developers were not actively participate in the land auction market and therefore did not hold largest share of land from land auction.

Eva Lee, the property analyst at ING Barings, raised out the causes of this situation is that “the Hong Kong’s top developers have bargaining power and pricing power in terms of buying land”. For example, Sun Hung Kai has a big stock of farmland acquired cheaply years ago for conversion to residential use, and is big enough to participate in the major property

sales that Hong Kong's government organizes by tender. Cheung Kong can get a place in a consortium to bid on valuable land when he needs it, without having to hold excess assets (The Asian Wall Street Journal 2002 cited in Fu & Ching 2004).

Moreover, compare with other countries around the world, the land prices in Hong Kong are extremely high which normally constituted 70 to 80 percent of the sales value of the completed flats (Fu & Ching 2004). Therefore, for a real estate development, developers require a huge capital outlay and time commitment to secure the financing of the land acquisition and construction works.

From the land sales record during 1999 to 2007 (Appendix 3), there were totally 70 land lots to be auctioned. Within these, 43 lots are having more than 100,000 sq. ft. (as 100,000-1,000,000 sq. ft. is generally regarded as medium size lots) of buildable area, of which only 3 lots have more than 1,000,000 sq. ft. (which is regarded as large scale lots). Also, 32 records of winning amount were more than 500 millions. It is easily to observe that several developers, especially Sino group, actively participated in the land auctions and they dominated the land auction markets as they are more cash-rich than the smaller developers.

Combined with the above findings of the land sales, it is observed that that the government as the monopolist on the supply of land is one of the consequences that lead to the high concentration in the land market as it established the barriers to entry, in terms of capital requirement and cost disadvantage, to the small developers and the potential entrants. This means that under this land disposal system, the large developers are more favorable than those small developers.

3.4.1.2. Housing Policies

The Hong Kong Government has, over the years, intervened extensively in the housing sector, despite its well-known reputation as being one of the most 'laissez faire' market economies in the world. Besides the restriction on supply of residential lands, there were intervention measures include provision of public housing and rent control in some years. As a result, housing prices are influenced to a significant degree by the government policy (Chan et al 2001).

The Sino-British Joint Declaration was created to address the concerns of those properties where leases expired on 30 June 1997. The Joint Declaration emphasized the importance of land issues in Hong Kong by establishing new policies for those leases expiring on or before the eve of the hand-over. Within the policy, a controversial issue pertaining to the amount of new land granted to 50 ha per year was viewed as a constraint on land supply.

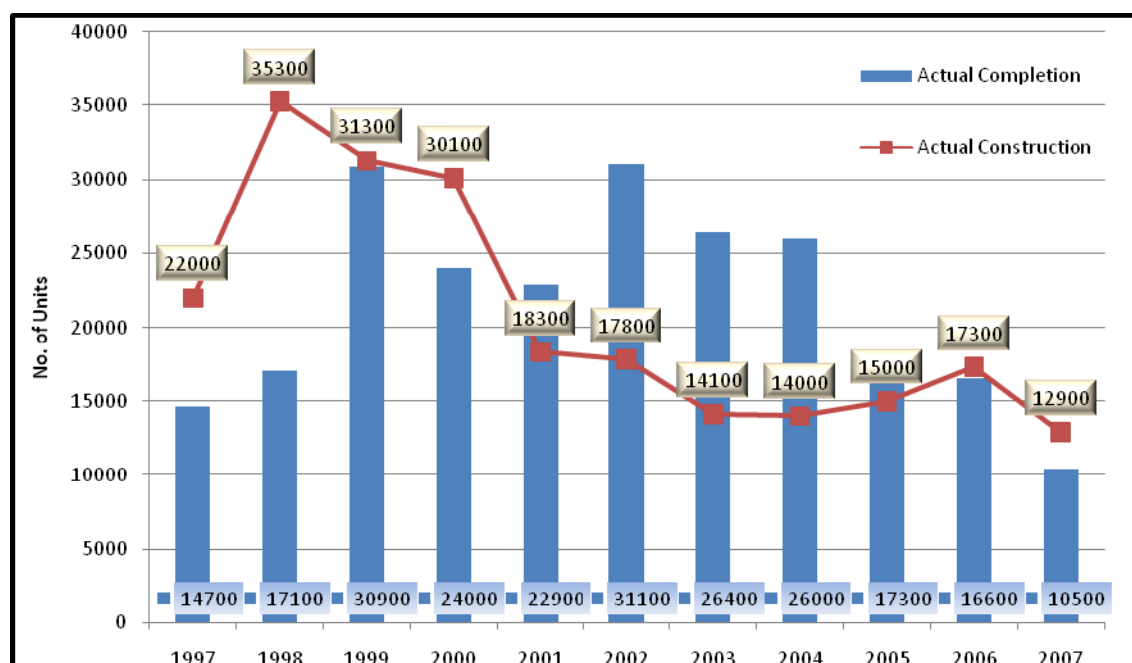
However, because of the growing population, there was a huge demand on housing. Hong Kong government takes measures such as increasing development density to mitigate housing shortages. There was a flaw in the 50 ha quota policy which stated the quota in terms of land area rather than gross floor area. As a result, the Lands Department could make use of this loophole to release land of high density, because such land will use up less of the allowed quota, yet giving a higher gross floor area.

However, this attempt also creates a social impact of congestion. In order to control this situation, the government regularly conducts studies on the housing circumstances in Hong Kong, for example, the *Task Force Report on Land Supply and Property Prices* in 1994 which aimed to cool the frenzied property market; *Homes for Hong Kong People into the 21st*

Century in 1998 and *Better Housing for All* in 1999. And during 1997, the pledge to build at least 85000 flats per year was implemented. The Hong Kong government made a commitment in its 1997 Policy Address to dispose of more land devoted to housing development to alleviate the housing shortage problem due to the population growth. The target consists of 50000 public housing/subsidized flats and 35000 private flats per annum. However, this policy created pressure on developers to auction or tender for land or utilize area in their land bank to produce the target figure.

The actual completion and construction of the private residential units from 1997-2007 was shown in Figure 3.3. It is observed that during 1998-2000, the amount of actual construction pushed up to more than 30000 units per year.

Figure 3.3 Actual Completion and Actual Construction of private housing units, 1997-2007

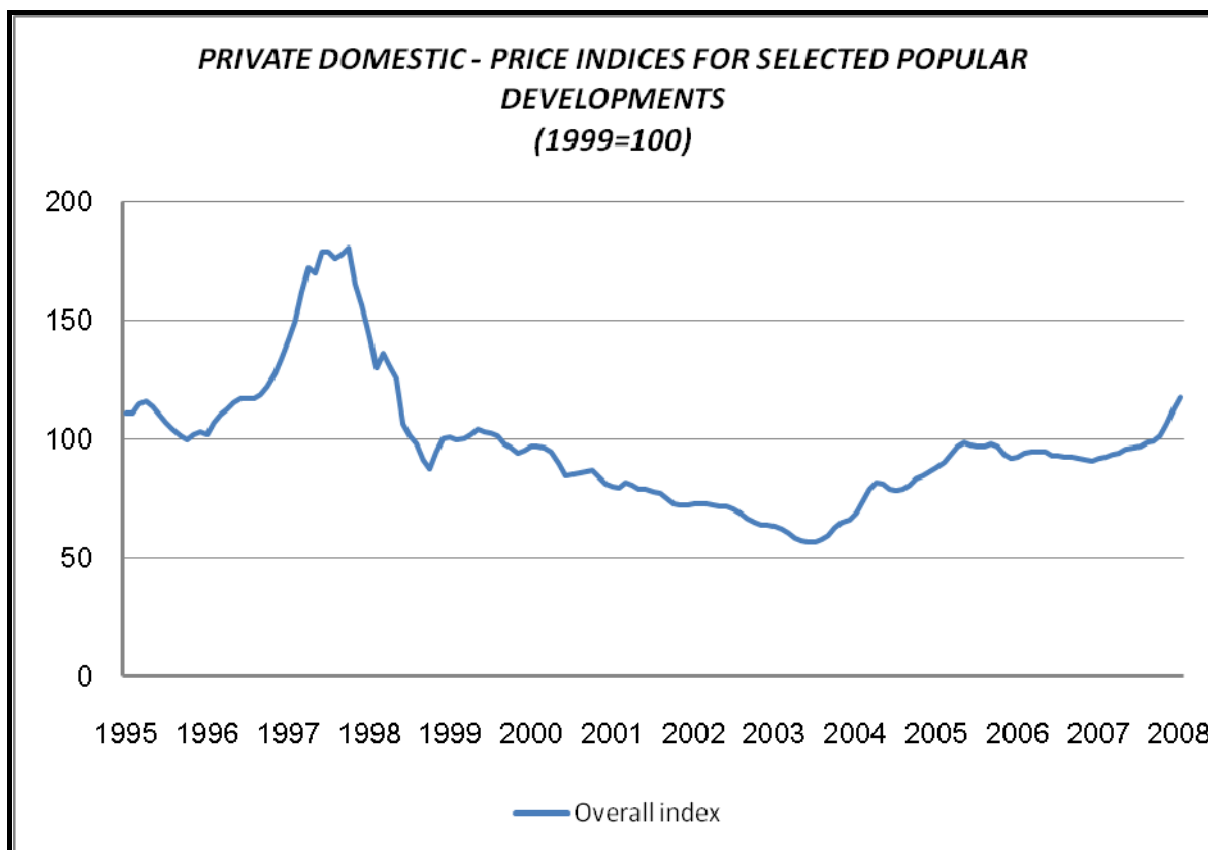


(Source: Property Reviews, Buildings Department)

However, the 85000 housing policy triggered the rapid downturn in the property prices as

shown in the Figure 3.4. Therefore, in 2002, the government imposed several policies, namely the nine-point plan, including the withdrawal from the role of property developer by halting the production and sale of public subsidized flats, thereby minimizing its intervention in the market in order to maintain a fair and stable environment to enable the sustained and healthy development of the private property market. And the Housing Authority also suspended the sale of the unsold and returned HOS flats as subsidized housing before the end of 2006 (HPLB 2003).

Figure 3.4 Price Indices for Hong Kong Property Market, 1995-2008



(Source: Rating and Valuation Department, 2008)

The government realized that land supply should be determined by market demand and to solve the situation that housing supply in excess the demand. As a result, they stopped the scheduled land auctions and suspended the Application List System until the end of 2004.

This action led to the decrease in the supply of new private flats after 2002 (HPLB 2003). Also, in order to deal with the large number of new flats that would be completed in the short term, extension of the period of the building covenants of development projects which originally will expire between 1 November 2003 and 31 October 2004 for one year was granted without additional charges. As subject to the conditions of individual sites, building covenants lasting three to five years are normally given. A developer is required to complete the development of a site within the prescribed period after acquiring site or modification to the land lease. This measure provided the developers with flexibility in adjusting the completion dates of their development projects according to market situation before offering them for sale (HPLB 2003).

The nine-point plan was considered one that favoured the developer conglomerates as the plan provided a temporary window for the wealthy developers to unload their inventories and get their cash back. Also, by placing a one-year moratorium on land sales, government did a disservice to smaller property players with small land banks who would have been able to boost their land banks at cheaper costs in the then depressed market without government's intervention (Poon 2006).

Observed from the past to recent policies, the large developers do have several advantages over those small developers. Besides their well-capitalized structures enable them to obtain the lands with high prices whenever they desired, Poon (2006) commented that the rise of those large developers owes a lot to a government that adopts a laissez-faire approach where it so suits them and at the same time actively protects their interests. They have always had government on their side, whether under British or Chinese sovereignty, as being the sole supplier of the land in Hong Kong, the government has a vested interest in the property sector

through the receipt of revenue from land sales and land premiums on lease modification.

3.4.2. Developers' market behavior

Although the uniqueness of the nature of Hong Kong residential property market structure in Hong Kong, the developers' market behavior is quite similar around the world. In United Kingdom, Ball (1999) conducted a study concerning the British housing development industry and he found out that the market contexts for the developers operate severely constrain their behaviors and this structural constraint together with the profit-maximizing nature of firm and inter-firm competition lead to simple firm strategies as follows:

1. Concerning production: use traditional and flexible methods and building types;
2. In relation to the housing market: identify and operate in the most profitable market segments and adopt procyclical pricing; and
3. With respect to the land market: adopt the most appropriate land banking and planning permission strategies in relation to market segments and regions of operation.

These strategies are low cost, apart from land holdings, and have the advantage of requiring minimal sophistication and forecasting ability. He also argued that developers place great importance on the workings of the land market, and on the state of their own land banks as over-building and optimistic land purchases are prime causes of house building failures. Moreover, the variability of land prices is more likely to fluctuate in line with firms' current development profits, which themselves are highly volatile. Therefore, that's why the developers are so focused on land markets and their own land banks. Study for Vancouver carried out by Goldberg and Daniel (1976) supported Ball's views on the residential

developer behavior. They pointed out that developers are primarily involved in the development of residential property and rely on this activity to generate profit. The high cost of land in conjunction with limited capital reserves and high financing cost make land banking an uncertain and high risk undertaking. Also, they are most concerned with factors affecting their development costs and place less emphasis on variables that affect the ultimate value of their product.

For the Hong Kong developers, they have some similar behaviors as those in other parts in the world. From the literatures reviewed, most of their market behaviors are summarized as follows.

3.4.2.1. Land Bank and Pricing strategies

As discussed before, large developers are in favor of holding a sufficient amount of land bank. And because of the reasons, they can impose some marketing strategies to reduce the threat of potential entrants. From the research of Lai and Wang (1999) as well as Poon and Chan (1998), they found out the following observations. When during the market boom times, large developers raise the housing supply as they can have efficient control for the timing of their launch schedules. And also, they price their properties by the buyer-based approach, which means marketers will try to find out the perceived values that the potential customers will assign to their products. While during the slump periods, those large developers delay their schedules to maximize the selling price and price their properties in competition-based pricing approach, which means marketers will set prices largely based on competitors' prices. These strategies reduce the threat of the potential entrants.

3.4.2.2. Sales techniques

Developers adapted their business strategies to suit the market climate. They competed fiercely among one another at times, for example in bidding for building lots, especially when the market was rising. However, Consumer Council's report (1996) suggested that they rarely competed head-on when selling their flats. They avoided clashes among themselves with sales techniques such as alternating sales of properties on competing sites and releasing completed flats in small batches. By releasing flats in batches, developers were able to test the market's reaction and price-discriminate their customers. They also restricted supply by retaining units for internal sales and deferring public sales. Such practices would have been difficult to sustain in a market where there was a real threat of new entrants.

3.4.2.3. Development Scale

In Hong Kong, the technology and organization utilized in the development and construction process is essentially the same across the various land uses, namely high-rise scale-intensive projects with high technology content and capital-intensive supply processes (Renaud et al 1997). This is a unique character of Hong Kong real estate economies apart from the others in the world. Therefore, large-scale private residential developments are commonly found in Hong Kong.

According to Lee (1985), there is no agreed definition on the term "Large-scale private residential development". Basically, large-scale private residential development can be broadly divided into two categories, the comprehensively planned and non-comprehensively planned. The former are those with the provision of a wide range of social and recreational

facilities, while the latter are provided with limited facilities. There are the common features of the large-scale private residential development. They are usually comprise of more than 10 blocks of high-rise residential buildings with more or less the same architectural design and arranged in an orderly way to give a uniform appearance. They can usually provide more than a thousand of shelters to the market and accommodate a population more than 10000 or above for a development project.

From the statistics (Table 3.2) for the large-scale private residential development, based on the above definitions, it is found that the large developers dominate this type of development. Together with the study of Tse, Hui and Chan (2001), they found that the large developers tend to dominate with the medium and large-scale lots, while small developers only held 9% of the market. It can be suggested those large developers locate themselves in a suitable market position or strategic domain to sustain their competitiveness by increasing their market share.

Table 3.2
Statistics of developers' participation in Large-scale private residential development during 1991-2006

Developers	Participate in projects with	
	More than 10 blocks	More than 2000 units
SHK	10	12
CK	11	11
Henderson	8	9
Sino	5	5
NWD	4	5
Wheelock	0	2
Hang Lung	0	0
Kerry	0	3

(Source: Various Annual Reports, Centadata)

High project costs and high liquidity position for acquiring land at short notice without unacceptable financial risk associated to the large scale development projects constitute to the growth of large developers. Developers need to have good access to capital. Thus they must have excellent business relationships with the financial community, so that they can have financial flexibility to secure at short notice suitable developable land for future development. For those larger developers, they maintain conservative financial structures and generally are cash-rich. The ability of these large developers enable them to bid for large land lots and allows them to develop mixed-use properties in prime locations with substantial positive internalized economies. Usually most final users are typically willing to pay higher prices for units in a large and comprehensively planned development with considerable internal economies and amenities. Therefore, developing at scale and internalize the consumer preferences are advantage that sets large developers aside from small developers, who routinely have to rely on redevelopment opportunities and discontinuous business circumstances associated there with (Renaud et al 1997).

3.5. Conclusion

After reviewing those literatures and statistics concerning the private residential property development market, it is obvious that the market is highly concentrated which majority of the market share are in hand of those large developers. The consequence of this market structure is the low contestability of the property development market.

Due to the land tenure system in Hong Kong, the government is having the monopolistic power over the land market. Its regulatory arrangements (especially land policies) greatly influence the property market and make the market less contestable than other places in the

world. It is found that the government policies are in favour of the large developers and facilitated them to maintain their market shares. Developers' strategies also constitute to the low contestability market, as their price strategies and scale developments, on one hand, can deter the incentive of the potential entrants due to the large developers' advantage in term of costs and product differentiation. And, on the other hand, these can maintain their market share and strengthen their market powers.

One point to note is that the large-scale developments do act as the barrier to entry to the small developers since it is observed that during the past 16 years, those developers with large market share dominated this sector of development and in turn maintain their market position.

Chapter 4

Methodology and Data

4.1. Introduction

The aim of this dissertation is to investigate the reasons for why the large Hong Kong private residential developers tend to develop large-scale developments. From the previous chapters, the private residential property development market structure and theoretical literatures concerning the market share and profitability relationship have been reviewed. Therefore, several hypotheses have been adopted to carry out further investigation.

Moreover, in order to investigate the variability of these propositions, in the methodology section, the rationale for the analysis will be discussed. And, our adopted analysis method, One-Way ANOVA, will be introduced and the variables to be included in the model are also needed to be clearly defined to facilitate the data collection process. In addition, the expected results will be stated in order to compare with the empirical results.

4.2. Propositions

The following core propositions reflect the economic structure within which the large Hong Kong private residential developers develop large-scale developments conduct business.

1. Large developers can sustain their large market share in the private residential property market under regulatory arrangements.

2. Large-scale developments act as a barrier to entry to new entrants and small developers;
3. The market share of the developers has a positive relationship with their profitability.

The propositions are subjected to further investigation in the following chapters so as to verify if they are supportable or not.

4.3. Methodology

The analysis for the above propositions is divided into several stages and described as follows.

Some of these stages have been discussed in the previous chapters:

Proposition 1: Large developers can sustain their large market share in the private residential property market under regulatory arrangements.

In Chapter 3, the investigation of proposition 1 consists of 2 stages as follows:

Stage 1: Desk research will be carried out by using published secondary sources of data to analyze the private residential market structure during 1991-2006, therefore the degree of market competition and market concentration can be assessed. In addition, literatures about the demand and supply of the housing market will be mentioned. Therefore, reader can be more familiar with the whole market situation.

Stage 2: Large developers have continuously attained relatively large market shares in the private residential market as shown in the analysis before. The study will investigate the market structure to consider its contestability. As in a fully contestable market, all participants act in a fiercely competitive manner resulting in maximum efficiency with prices close to costs. However, if the market is not contestable, there is no threat of new entrants to the

market and high market concentration would be resulted, and there is also a risk of abuse of market power. The contestability analysis confined to two aspects. First, in order to investigate the influence of the regulatory arrangement (especially the land policies) on market share, studies on those regulatory arrangements will be carried out. If it is shown that those arrangements favor the large developers, the result can help explain why large developers hold large market share for many years.

Proposition 2: Large-scale developments act as a barrier to entry to new entrants and small developers.

The second issue for the contestability test is the developers' market behavior. In the later part of Chapter 3, in order to achieve the objective of demonstrating that large-scale developments act as a barrier to entry to the new entrants and small developers, the nature of large-scale developments will be examined. In addition, statistics concerning the large-scale private residential developments during 1991-2006 will be provided. If there was a trend that the large-scale developments were mainly provided by the top-tier developers, the proposition can be justified.

Proposition 3: The market share of the developers has a positive relationship with their profitability.

In Chapter 5, an empirical test will be conducted to investigate the relationship between market share and the profitability of the developers, ANOVA method is to be used. In the analysis, the selected developers are divided into two groups, large market share and small market share. The proposition can be supported if it shown that evidence is found that the market share did have positive influence to the profitability.

4.4. One-Way ANOVA (One between-subject ANOVA)

Analysis of variance (ANOVA) is a technique originally developed by Fisher (1925). Its purpose is to predict a single dependent variable on the basis of one or more predictor (independent) variables, and to establish whether those predictors are good predictors. It can deal with tests concerning two or more population means. By using the ANOVA test, the hypothesis to be tested is that the different sample means come from the same population.

In the following sections, the methodology of computing the statistics used in the tests and the testing procedure as well as the assumptions made will be discussed.

4.4.1. Assumptions of the One-way ANOVA

The Analysis of Variance method has the following assumptions:

1. The standard deviations (SD) of the populations for all groups are equal (the homogeneity of variance).

$$\text{i.e. } \sigma_L^2 = \sigma_S^2 = \sigma_e^2$$

The term σ_e^2 , where e stands for error, represents the error variance – the variance unrelated to any group differences.

2. The structural model is an accurate description of the data in this case, that only one factor influences the data systematically, and the residual variability represents random error.
3. The error is normally distributed within each group (assumption of normal distribution of error).

4. Independence of error components: the error components (ϵ_{ij}) are independent, or uncorrelated.

4.4.2 The Empirical Model

$$R_{ij} = \mu + \alpha_i + \epsilon_{ij}$$

R_{ij} represent the annual return on assets of the j firms in group i

μ represent the overall mean annual return on assets

μ_i represent the mean of annual return on assets in group i

α_i represent the degree to which the mean of group i deviates from the overall mean. So α_i represents the contribution of group i , i.e. $\alpha_i = \mu_i - \mu$

ϵ_{ij} represents the amount by which firm j in group i deviates from the mean of its group (the 'error' or 'uniqueness' of firm j in group i), i.e. $\epsilon_{ij} = R_{ij} - \mu_i$

4.4.3. The Null Hypothesis

We will test the null hypothesis that there is no difference between the various groups. The null hypothesis can be stated like this:

$$H_0: \mu_L = \mu_S = \mu$$

In other words, the null hypothesis is that all means are equal to each other and the grand mean (μ) and that all group effects are zero: that is $\alpha_L = \alpha_S = 0$

4.4.4 The Computation for ANOVA

The methodology of ANOVA is a very straightforward computation procedure involving computation of means and variances. The aim of these statistical data is to test the null

hypothesis by the use of F-Test which requires the computation of the variation between groups (SSB) and the variation within each group (SSW). And as the ratio of the variation between columns to the variation with columns follows the F-distribution, which varies according to the number of degrees of freedom, therefore, it is required to determine the number of degrees of freedom for SSB, SSW and SST. After that the analysis of variance table can be created and the F-value can be found out which shows the result that whether our hypothesis is accept or not. There are several terms will be clarified further to facilitate a thorough understanding of the use of analysis of variance method in this study.

4.4.4.1 Between group variation and Within group variation

The between group variation is measured by the between-group sum of squares as follow:

$$SSB = \sum_i r(\mu_i - \mu)^2$$

While the within-group variation can be found in a similar manner as follow:

$$SSW = \sum_i \sum_j (x_{ij} - \mu_i)^2$$

where x_{ij} means the individual value for firm j in group i .

4.4.4.2 F-statistics and its Components

F-distribution is a ratio of two variances and it varies according to the number of degrees of freedom. The use of the F-statistics is to test the hypothesis that the examined two variances are equal and therefore, the expected F-value should be equal to 1. If the variances are equal, the F-value will be equal to unity. The critical F-statistic found in the F-table allows acceptance of the hypothesis of equality in spite of reasonable variation from unity which

commonly assume a 5-percent risk level. It means that a certain amount of variation from unity may be due to chance. If the variation is greater than that allowed, the hypothesis is rejected.

In this analysis of variance, we are comparing the mean square between to the mean square within. Using this method, the difference between means can be tested, because the mean square within a particular group is the variation due to chance while the mean square between variations is variation due to chance plus variation due to the different group. If the ratio were equal to unity, the variation due to different group would be equal to 0.

$$F = \frac{MSB}{MSW} = \frac{\text{chance variation} + \text{variation due to different group}}{\text{chance variation}}$$

Therefore the ratio of the chance variation would be equal to unity. As the variation due to the different group increases, the value of F also increases. If this computed value exceeded the critical F-value for the appropriate number of degrees of freedom and the risk level, the null hypothesis would be rejected.

4.4.4.2.1 Degrees of freedom

The number of independent pieces of observations that go into the estimate of a parameter is called the degrees of freedom (*df*). In general, the *df* of an estimate is the number of independent observations that go into the estimate, minus the number of parameters estimated from those observations as intermediate steps.

The number of degrees of freedom is different for SSB, SSW and SST. The SSB has (k-1)

degrees of freedom while the SSW is determined by the total number of cells within the experiment and is equal to $k(r-1)$. And then, the MSB and MSW can be determined by using the corresponding number of degrees of freedom to divide the SSB and SSW.

4.4.4.2.2 p-value

The p-values are usually used to show the chance that the estimated coefficient (α_i) is equal to zero. Usually if it is shown that the chance of “ α_i equals to zero” is equal or lower than 5%, it is said that α_i is significant at 5% level, which is commonly accepted as significant. The smaller the p-value is, the more significant the estimated coefficient is.

4.5. Check assumptions of ANOVA

If the populations from which data to be analyzed by a one-way analysis of variance (ANOVA) were sampled violate one or more of the one-way ANOVA test assumptions, the results of the analysis may be incorrect or misleading. Moreover, small or unbalanced sample sizes can also increase vulnerability to assumption violations. For our analysis, there may be the problems of heteroscedasticity and non-normality.

4.5.1. Tests for homogeneity of variances (Heteroscedasticity)

Levene’s Test is used to test if the samples have equal variances. ‘Equal variance across samples’ is called homogeneity of variance. It tests the null hypothesis that the population variances are equal. If the resulting p-value of the Levene’s test is less than the critical value (0.05), the obtained differences in sample variances are unlikely to have occurred based on

random sampling. Thus, the null hypothesis of equal variances is rejected and it is concluded that there is a difference between the variances in the population. Similarly, if the p-value is greater than the critical value, the variances are significantly homogeneous and we can then be confident about proceeding with the one-way ANOVA assuming equal variances.

4.5.2. Test for the Normality Assumption

One-Way ANOVA are not as sensitive to lack of normality of errors as they are to heterogeneity of variances. However, the test for homogeneity of variances is susceptible to lack of normality and so can give misleading results if errors are badly non-normal. For this reason it is essential to carry out test for this condition.

The values in a sample may indeed be from the same population, but not from a normal one. Signs of non-normality are skewness (lack of symmetry) or light-tailedness or heavy-tailedness. In this study, One-Sample Kolmogorov-Smirnov Test will be used to test for the normality of the data, which is a test for goodness of fit usually involves examining a random sample from some unknown distribution in order to test the null hypothesis that the unknown distribution function is in fact a known, specified function. The analysis will show an Asymp. Sig. (2-tailed) value, which is also known as the p-value, it tells the probability of getting the results if the null were actually true (i.e., it is the probability that would be in error if you rejected the null hypothesis). If the p-value is less than 0.05, you reject the normality assumption, and if the p-value is greater than 0.05, there is insufficient evidence to suggest the distribution is not normal (meaning that you can proceed with the assumption of normality), there is no reason to doubt the distribution is normal, so it is safely to proceed with the ANOVA analysis.

However, if there are only a small number of data points, non-normality can be hard to detect. If there are a great many data points, the normality test may detect statistically significant but trivial departures from normality that will have no real effect on the F statistic.

The one-way ANOVA's F test will not be much affected even if the population distributions are skewed, but the F test can be sensitive to population skewness if the sample sizes are seriously unbalanced. If the sample sizes are not unbalanced, the F test will not be seriously affected by light-tailedness or heavy-tailedness, unless the sample sizes are small (less than 5), or the departure from normality is extreme.

Moreover, the one-way ANOVA's F test is robust for validity against non-normality, but it may not be the most powerful test available for a given non-normal distribution, although it is the most powerful test available when its test assumptions are met. In the case of non-normality, a nonparametric test or employing a transformation may result in a more powerful test.

4.6. Data Specifications

In this section, it aims to provide a detailed account of the data used in this empirical study. The period of data used in this study is defined. Also, the definitions and sources of the proxy data for each variable are described.

4.6.1. Period of Data

The data used in this study is restricted to the period between 1995 and 2006, totaling 12 years. It is the longest time period within which full data sets are available for the selected variables.

4.6.2. Definition and sources of data

Below is a detailed account of the definitions and sources of the data for each variable. The quality and reliability of data has important implication for the validity of the empirical findings. All the data employed in this empirical analysis are publicly available information and collected from various authoritative sources- government websites and official publications.

4.6.2.1. Market Share

Table 4.1 List of Large Share Developers and Small Share Developers

Large Share Developers (Group L)			Small Share Developers (Group S)		
Stock Code	Company	Corresponding Market share	Stock Code	Company	Corresponding Market share
0001	Cheung Kong (Holdings) Limited	25%	0017	New World Development	6%
0012	Henderson Land Development Company Limited	19%	0101	Hang Lung Properties Limited	6%
0016	Sun Hung Kai Properties Limited	30%	0049	Wheelock Properties (HK) Limited	5%
0083	Sino Group	8%	0683	Kerry Properties Limited	2%

The only independent variable used for this study analysis is the market share, which means

the corresponding market share of each developer in the new supply of the private residential property market among these 8 developers during the period between 1991 and 2006. And the findings are based on the information given in the respective annual reports. As illustrated in the Table 4.1, the 8 developers are divided into two groups, large share group (Group L) and the small share group (Group S), according to their market share.

4.6.2.2. Profitability (Return on Assets)

The dependent variable in this study is the profitability, which is the main index of the private firm's economic performance. However, profitability is a matter of degree, not of absolute amounts. The simple total of dollar profits is not enough to show how profitable a firm is. Therefore, in this study, the rate of return on asset is used as the measurement of profitability, for that show how profitable a company's assets are in generating revenue.

ROA can be computed as:

$$\text{ROA} = \text{Net income} / \text{Total Assets}$$

This number tells what the company can do with what it's got, i.e. how many dollars of earnings they derive from each dollar of assets they control. It's a useful number for comparing competing companies in the same industry. The number will vary widely across different industries. Return on assets gives an indication of the capital intensity of the company, which will depend on the industry. However, ROA cannot be directly obtained from the annual reports. Some simple calculations need to be involved and the fiscal information, net income and total assets, can be obtained from the profit and loss statement and balance sheet in the annual reports.

4.7. Limitation of the empirical study

ANOVA test on the profitability rate for each year will be carried out. However, as there are only limited samples for carrying out these analyses, small sample sizes may increase vulnerability to assumption violations. Therefore, the entire annual profitability rate between 1995 and 2006 will be used to conduct a single ANOVA test, and our analysis of the result will focus on this test. To summarize, there will be 13 tests, of which 12 tests will analyze performance for each year and with one using 12 years data. Descriptive statistics for the variables used are illustrated in the Table 4.2a and Table 4.2b.

Table 4.2a Descriptive statistics for the ANOVA analysis, 1995-2006

		N	Mean	Std. Deviation	Std. Error	Minimum	Maximum
1995-2006	Large	48	0.070351	0.054407	0.007853	0.000861	0.340972
	Small	48	0.035206	0.034536	0.004985	-0.050550	0.128316
	Total	96	0.052779	0.048648	0.004965	-0.050550	0.340972

Table 4.2b Descriptive statistics for the ANOVA analysis for each year, 1995-2006

		N	Mean	Std. Deviation	Std. Error	Minimum	Maximum
1995	Large	4	0.098402	0.060281	0.030140	0.0318	0.1762
	Small	4	0.038802	0.016184	0.008092	0.0154	0.0527
	Total	8	0.068602	0.051812	0.018318	0.0154	0.1762
1996	Large	4	0.087824	0.043873	0.021936	0.0385	0.144
	Small	4	0.042577	0.013579	0.006789	0.031	0.0587
	Total	8	0.065200	0.038586	0.013642	0.031	0.144
1997	Large	4	0.070850	0.063147	0.031574	0.0241	0.1639
	Small	4	0.037899	0.026039	0.013019	0.0186	0.0747
	Total	8	0.054374	0.048060	0.016992	0.0186	0.1639
1998	Large	4	0.055097	0.009405	0.004702	0.0413	0.0626
	Small	4	0.026954	0.020082	0.010041	0.0113	0.0535
	Total	8	0.041025	0.020905	0.007391	0.0113	0.0626

1999	Large	4	0.125358	0.144260	0.072130	0.0363	0.341
	Small	4	0.019965	0.014459	0.007230	0.0017	0.0321
	Total	8	0.072662	0.110373	0.039023	0.0017	0.341
2000	Large	4	0.052412	0.037319	0.018659	0.0129	0.103
	Small	4	0.016482	0.013280	0.006640	0.0036	0.0341
	Total	8	0.034447	0.032269	0.011409	0.0036	0.103
2001	Large	4	0.028968	0.018266	0.009133	0.0063	0.049
	Small	4	0.014029	0.011421	0.005711	0.0044	0.0306
	Total	8	0.021499	0.016207	0.005730	0.0044	0.049
2002	Large	4	0.029080	0.016183	0.008092	0.0086	0.0442
	Small	4	-0.012764	0.038205	0.019103	-0.0506	0.0214
	Total	8	0.008158	0.035186	0.012440	-0.0506	0.0442
2003	Large	4	0.045320	0.014779	0.007390	0.0309	0.0658
	Small	4	0.041219	0.048243	0.024122	-0.0088	0.0977
	Total	8	0.043269	0.033104	0.011704	-0.0088	0.0977
2004	Large	4	0.08706	0.02396	0.01198	0.052	0.1037
	Small	4	0.07447	0.04492	0.02246	0.0241	0.1283
	Total	8	0.08077	0.03400	0.01202	0.0241	0.1283
2005	Large	4	0.086968	0.017586	0.008793	0.0647	0.1076
	Small	4	0.059044	0.034062	0.017031	0.0093	0.0862
	Total	8	0.073006	0.029199	0.010323	0.0093	0.1076
2006	Large	4	0.078729	0.006683	0.003341	0.0724	0.0862
	Small	4	0.064596	0.030996	0.015498	0.0299	0.092
	Total	8	0.071663	0.022090	0.007810	0.0299	0.092

4.8. Conclusion

In this chapter, three propositions have been built up according to the previous reviews on the literatures and established the methodology to investigate the validity of the propositions.

One-way ANOVA model and details of the data used in the empirical analysis have also been introduced which will be used to empirically examine the market share and profitability relationship in the private residential property development market. Next chapter will present the model adopted and results in this study.

Chapter 5

Empirical Results and Analysis

5.1. Introduction

In this chapter, the results of the ANOVA study will be shown and illustrated. The significance of the model and the selected variables will also be verified. After that, a comprehensive analysis will be given to the results of the empirical study. Finally, the implications of this empirical study will be presented.

5.2. Analysis of the Empirical Results

With the help of computer statistical tools, the results of the ANOVA model are produced after computing all the required data. The results of this ANOVA analysis are shown in Table 5.1.

As refer to Table 5.1, although the results are not significant (p -value is higher than the critical value, 0.05) for the ANOVA analyses of each year, from 1995 to 2006. However, as mentioned in the previous chapter, there are only eight samples for carrying out analysis for each year. Therefore, their explanatory powers are not high as small sample sizes may increase vulnerability to assumption violations. Therefore, the entire annual profitability rates between 1995 and 2006 have been used to conduct a single ANOVA test. Table 5.4 shows that full result of this ANOVA analysis.

Table 5.1 The Summarized ANOVA Results

	Test of Homogeneity of Variances		Test of Normality (One-Sample Kolmogorov-Smirnov)	ANOVA	
	Levene Statistic	Sig.	Asymp. Sig. (2-tailed)	F-value	Sig.
1995	3.041	0.132	0.719	3.647	0.105
1996	2.352	0.176	0.931	3.883	0.096
1997	2.384	0.174	0.617	0.931	0.372
1998	2.811	0.145	0.814	6.443	0.044
1999	6.93	0.039	0.138	2.114	0.196
2000	1.619	0.25	0.839	3.291	0.120
2001	1.118	0.331	0.745	1.924	0.215
2002	27.11	0.002	0.68	4.068	0.090
2003	9.428	0.022	1	0.026	0.876
2004	2.105	0.197	0.771	0.245	0.638
2005	1.518	0.264	0.636	2.122	0.195
2006	32.326	0.001	0.64	0.795	0.407
1995-2006	1.614	0.207	0.201	14.277	0.000

(Numbers in **Bold** type mean the corresponding result is insignificant)

Table 5.2 Test of Homogeneity of Variances

Test of Homogeneity of Variances			
RETURN ON ASSETS			
Levene Statistic	df1	df2	p-value.
1.614	1	94	0.207

From the result of the Levene test (Table 5.2), the resulting p-value is greater than the critical value (0.05), the variances are significantly homogeneous and it is confident that the analysis is proceeding with the assumption of equal variances. For the test for normality, One-Sample Kolmogorov-Smirnov Test, the result has been shown in Table 5.3. Since the value of Asymp. Sig. (2-tailed) is greater than the critical value (0.05), there is insufficient evidence to suggest

the distribution is not normal. The assumption of normality is, therefore, not violated and together with the homogeneity of variance, they support the proceeding ANOVA test has a stronger explanatory power as the test assumptions are met.

Table 5.3 One-Sample Kolmogorov-Smirnov Test

		RETURN ON ASSETS
N		96
Normal Parameters(a,b)	Mean	5.28E-02
	Std. Deviation	4.86E-02
Most Extreme Differences	Absolute	0.109
	Positive	0.103
	Negative	-0.109
Kolmogorov-Smirnov Z		1.071
Asymp. Sig. (2-tailed)		0.201
a Test distribution is Normal.		
b Calculated from data.		

Therefore, it is believed that the ANOVA model has a good overall fit since it does not violate the assumptions specified in Chapter 4, namely the homogeneity of variances and normality of data.

Table 5.4 The ANOVA Result of 1995-2006

RETURN ON ASSETS					
	Sum of Squares	Df	Mean Square	F	p-value.
Between Groups	0.02965	1	0.02965	14.277	0.000
Within Groups	0.195	94	0.00208		
Total	0.225	95			

Moreover, having a high F-statistic of 14.277 indicates the probability to accept the null

hypothesis is extremely low. Also, through observing the p-value in Table 5.4, the significance of the analysis that market share has effect on the profitability rate has been supported. As mentioned in Chapter 4, the coefficient is generally accepted as significant if its p-value is smaller or equal to 0.05, which is said to be significant at the 5% level. In this study, the standard of “significance” of results is set at this 5% level. Therefore, the analysis shows that market share has significant effects on the profitability rates of the developers. The explanation to this result will be discussed in the later part.

5.3. Implications of Findings

This section attempts to explain the impacts of market share on profitability of developers in Hong Kong. From the previous ANOVA analysis, it showed that the profitability of the developers, who attained a relative high market share developers, are different from those only have small share and by observing their group means, the large share group has a higher mean than the small share group. Therefore, it can be said that market share of developers have a positive relationship with their profitability.

As discussed in Chapter 3, the private residential property market is not very contestable and highly concentrated. According to the theoretical explanations mentioned in Chapter 2, the relationship between market share and profitability can be explained by any one of the three theories, namely the Efficiency Theory, Market Power Theory and Product Quality Assessment Theory.

Based on the definition of the efficiency theory, the large developers do possess the benefit of economies of scale in several ways. First, as shown in Chapter 3 that large-scale development

is dominated by those large developers, though this kind of development project carries a greater risk, the developers can benefit from the economies of scale in large project (Chau 1995 cited in Renaud 1997) and receive a relatively higher return to compensate the risk. Therefore, the large-scale development projects warranted a proportionate yield to those who invested in them (Tse et al 2001).

Also, observing from the pricing and sales behaviors, economies of learning and experience allow the large developers to gain advantages over the small developers and entrants. With larger market share, they have more experience than those small developers in selling and pricing their properties under different economic environment, therefore, their decision making skills would be better.

Also, after the analysis of the contestability of the private residential property market, it is no doubt that large developers can exert their market power to affect the property development market in order to maximize their benefits since the market is not contestable enough. Their sizes and importance in the market enable them to obtain inputs such as land resources and capital financing at a favorable position e.g. land bank or lower financing costs, which have been discussed in Chapter 3. Moreover, they can set prices rather than being a price taker especially during the boom time, it is because they have the bargaining power over the buyers as most of the housing supply is in the hand of those large developers.

Large developers also provide people with a brand name effect. Since the market is under an uncertain and imperfect information environment about the product performance, their established brand names and reputations provide buyers a more superior quality than those of the smaller developers. Also, as the large developers are more cash-rich, they would put more

resource to their promotion, it can help building up their images for both the projects and firms, so that the consumers are more willing to spend more for the more promised high-quality units provided by the large developers. And product differentiation advantage provided by the large-scale development also allows the large developers to receive a high price as the consumers would like to pay a higher price for the units in the large-scale development projects which can provide with them more amenity and convenience services (Lai 1996).

5.4. Conclusion

To conclude, this chapter has presented and interpreted the empirical results, regarding how market share of the developers affect their profitability. As the ANOVA analysis for profitability between large share developers and small share developers provided a significant result, it supported the proposition that market share of the developers has a positive relationship with their profitability.

The result is important to developers, interested real estate investors as well as government bodies. These first two parties can thus evaluate their current strategies in order to maximize their profits and the government can see whether the current market structure is healthy to the whole society or not. And next chapter will come to the conclusion of this dissertation.

Chapter 6

Conclusion

6.1. Conclusion

The aim of this study was to investigate the market structure of the private residential property market as well as the behavior of those large developers in developing large-scale development in Hong Kong to investigate their relationship to the developers' profitability. In particular, literatures together with the desk analysis have provided an extensive investigation to the private property development market. First of all, a highly concentrated market is found, inside which more than 60% of market share are held by the top nine developers and more than 50% are in the hand of top four developers during the period of 1991-2006. And especially in 2006, 74% of new housing units are provided by those four developers, it shows the market is becoming more and more concentrated. It can be concluded that the private property development market is an oligopolistic market since after the in-depth discussion, a low contestability market is observed.

Large developers can have advantages, in terms of costs and capital requirement, in obtaining lands from different channels. Furthermore, large developers usually have a huge amount of land bank, it enables them to maintain a smooth production schedule and determine their strategies which the small developers and the potential entrants cannot enjoy. Also, the capital requirement to enter the industry is high since the land costs in Hong Kong is relative high, it induced the financial risk to the small developers which are not so well-capitalized and less prone to get financial assistance than the larger developers.

In addition, barriers to entry to the property development market were found from the marketing strategies and pricing practices by the large developers, which lead to this low contestable market. As the former can maintain the developers' market share and market power, the latter can deter the incentive of entrants as the developers can adopt a competitive pricing strategy when the market sentiment is bullish. Moreover, since from the statistics of the developer participation in large-scale developments, it is found that those large-share developers do dominate this sector of market. This kind of development can allow the large developers to enjoy the scale economies and product differentiation advantages from the others.

Last but not least, the government regulatory arrangements concerning the housing and land matters in the past decades also constituted to the mention market structure. As discussed in Chapter 3, those large developers are more beneficial from the implementation of those policies than the small developers no matter how the market sentiment is. Therefore, the large developers can always maintain a relative high market position in the market.

Moreover, the empirical model of this study has tested the relationship between market share and the developers' profitability. A significant result was found which showed that market share do have a positive influence to the profitability. Therefore, it can be a signal for both government and the developers and they should take into account the market share effect when they are making decision for either land and housing policies or business strategies.

6.2. Limitations of the study

As mentioned in Chapter 4, the limitation of the empirical study is the inadequacy of data.

The data used in the empirical model is inadequate in reflecting the real situation entirely. As the profitability rate can only be found out for those public listed property development company, there are still some private development company like Nan Fung and Chinachem Group which are also active participants in the private residential property development market, however, their information could not be included as they did not release any profit information out.

Also, actually the ANOVA test on the profitability rate for each year should be carried out. However, small sample sizes may increase vulnerability to assumption violations. The entire annual profitability rates between 1995 and 2006 have be used to conduct a single ANOVA test, but there should be in reality some other factors influencing the profitability when a time-series of data is used.

Therefore, it is suggested that if more development companies could be included in the future, this study is recommended to be carried out again. Also, it is also beneficial to the society that there are continuous researches on the private residential property market structure so as to monitor any change in situation and influences of policies from time to time.

Appendix 1: Development Details by Developers**Developments of Sun Hung Kai Properties**

Year	Development Name	Location	Group Interest (%)	No. of Units	Attributable Units to the Group
1995	Stanford Villa	7 Stanley Village Road	20	72	14.4
1995	Sea Crest Villa (Phases 2 & 3)	Sham Tseng Lots 211 & 212 in DD 387	100	868	868
1995	Pristine Villa	Sha Tin Town Lot 331	JV	498	498
1995	Curio Court	20 Ping Hong Lane, Yuen Long	100	56	56
1995	Aegean Villa	Clearwater Bay Lot 333 in DD 224	100	12	12
1995	Royal Ascot (Towers 1-7)	Shatin Town Lot 411	JV	1224	1224
1995	Europa Garden	Kwu Tung Road, Sheung Shui	100	63	63
1995	The Harbourview	11 Magazine Gap Road	50	51	25.5
1995	Coronet Court	2 Hung Tai Road, Yuen Long	100	88	88
				2932	2849
1996	Palm Springs (Phases 1B-1E)	Wo Shang Wai, Yuen Long	100	587	587
1996	Meadowlands (Phases 1 & 2)	Tan Kwai Tsuen Lot 4285 in DD 124, Yuen Long	100	488	488
1996	Woodland Crest	Fanling Sheung Shui Town Lot 36	60	548	328.8
1996	Royal Palms	Wo Shang Wai, Yuen Long	100	424	424
1996	Royal Ascot (Towers 8-11)	1 Tsun King Road, Shatin	JV	1280	1280
1996	King's Park Villa	1 King's Park Rise, Ho Man Tin, Kowloon	90	359	323.1
1996	Jasper Court	Ma Fung Ling, Yuen Long	100	152	152
1996	51 & 55 Deep Water Bay Road	51 & 55 Deep Water Bay Road	100	11	11
1996	18 Tung Shan Terrace	18 Tung Shan Terrace	50	14	7
				3863	3601
1997	East Point City	Chung Wah Road, Tseung Kwan O	100	2184	2184
1997	Villa Tiara	Tuen Hing Road, Tuen Mun	100	556	556

Appendix 1: Development Details by Developers

1997	Parkside Villa	23 Town Park Road South, Yuen Long	100	350	350
1997	Grand Del Sol	Yuen Long	85	1100	935
1997	Royal Sea Crest	Tsing Lung Tau	100	168	168
1997	3 Repulse Bay Road	3 Repulse Bay Road	100	42	42
1997	22 Tung Shan Terrace	22 Tung Shan Terrace	100	16	16
				4416	4251
1998	Le Palais	8 Pak Pat Shan Road, Tai Tam	100	34	34
1998	Chateau Royale	Tai Po Town Lot 142	100	68	68
1998	Belair Monte	3 Ma Sik Road, Fanling	8	1680	134.4
1998	Greenfields	1 Fung Kam Street, Yuen Long	7	480	33.6
1998	Symphony Bay	Sai Sha Road, Sai Kung	100	972	972
1998	Botania Villa	Tuen Mun	100	726	726
1998	Chelsea Heights	Tuen Mun	100	787	787
1998	Villa Esplanada Phase 1	Tsing Yi	22.5	792	178.2
				5539	2933
1999	Castello	69 Siu Lek Yuen Road, Shatin	100	1744	1744
1999	Scenic View	63 Fung Shing Street, Kowloon	100	1034	1034
1999	Mount Haven	3 Liu To Road, Tsing Yi	100	816	816
1999	Tung Chung Crescent (Block 7 to 9)	Tung Chung Town Lots 1 & 2	20	991	198.2
1999	Grand Pacific Views & Grand Pacific Heights	Castle Peak Road, Tuen Mun	100	856	856
1999	Tung Chung Crescent	Tung Chung Town Lot 1	20	1212	242.4
1999	Waterfront South	1-5 Tue Wok Street, Aberdeen	100	235	235
1999	Villa Esplanada Phase 2	8 Nga Ying Chau Street, Tsing Yi	22.5	832	187.2
1999	Hillview Court	Pak Shek Wo, Sai Kung	100	115	115
				7835	5428
2000	Royal Peninsula	3 Hung Lai Road, Kowloon	50	1669	834.5
2000	Le Sommet	28 Fortress Hill Road, North Point	100	394	394
2000	Villa Premiere	99 Fung Cheung Road, Yuen Long	100	320	320
2000	Villa Esplanada Phase 3	8 Nga Ying Chau Street, Tsing Yi	22.5	1200	270
2000	Chelsea Heights Phase 2	1 Shek Pai Tau Path, Tuen Mun	100	808	808

Appendix 1: Development Details by Developers

2000	The Belcher's Phase 1	89 Pok Fu Lam Road, Western Mid-Levels	29	1093	316.97
2000	Grand Villa	401 Chatham Road, Hung Hom	100	40	40
2000	Grand Horizon	11 Cheung Wan Street, Tsing Yi	85	1432	1217.2
2000	Villa Claire	18 Ming Yuen Western Street, North Point	100	52	52
				7008	4253
2001	The Leighton Hill	Inland Lot 8882, Happy Valley	100	552	552
2001	The Parcville	33 Yuen Long Kau Hui Road, Yuen Long	66.7	1618	1079.206
2001	Prima Villa	8 Chui Yan Street, Shatin	100	1024	1024
2001	The Belcher's Phase 2	89 Pok Fu Lam Road, Western Mid-Levels	29	1121	325.09
2001	Les Saisons	28 Tai On Street, Shauekiwan	30	864	259.2
2001	Oscar by the Sea Phase 1	Tseung Kwan O Town Lot 51	JV	424	424
2001	Ocean Shores Phase 1	88 O King Road, Tseung Kwan O	49	1920	940.8
				7523	4604
2002	Park Island Phase 1 & 2	8 Pak Lai Road, Ma Wan	JV	2571	2571
2002	Park Central Phases 1 & 2	Tseung Kwan O Town Lots 57 & 66	57.52	4152	2388.2304
2002	Villa by the Park	139 Castle Peak Road, Yuen Long	100	828	828
2002	Aegean Coast	Tuen Mun Town Lot 374	25	1624	406
2002	1 Po Shan Road	1 Po Shan Road, Mid-Levels	60	58	34.8
2002	Kelletteria	71 Mt. Kellett Road, The Peak	100	4	4
2002	Oscar by the Sea Phase 2	8 Pung Loi Road, Tseung Kwan O	JV	1160	1160
2002	Ocean Shores Phase 2	88 O King Road, Tseung Kwan O	49	1536	752.64
2002	1 Lion Rock Road	1 Lion Rock Road, Kowloon	100	57	57
				11990	8202
2003	Liberte	833 Lai Chi Kok Road, Cheung Sha Wan	35.44	2439	864.3816
2003	Ocean Shores Phase 3B	88 O King Road, Tseung Kwan O	49	768	376.32
2003	Ocean Shores Phase 3A	88 O King Road, Tseung Kwan O	49	1504	736.96
2003	Seaview Crescent	Tung Chung Town Lot 3	20	1537	307.4
				6248	2285

Appendix 1: Development Details by Developers

2004	18 Farm Road	18 Farm Road, Kowloon	100	320	320
2004	YOHO Town Phase 1	8 Yuen Lung Street, Yuen Long	100	2201	2201
2004	Sham Wan Towers	3 Ap Lei Chau Drive, Ap Lei Chau	100	1040	1040
2004	BeneVille	18 Tuen Kwai Road, Tuen Mun	100	684	684
2004	8 Waterloo Road	8 Waterloo Road, Tuen Mun	JV	576	576
2004	Vianni Cove	33 Tin Kwai Road, Tuen Mun	40	1091	436.4
				5912	5257
2005	The Arch	1 Austin Road West, Kowloon	JV	1054	1054
2005	Severn 8	8 Severn Road, The Peak	100	22	22
2005	Park Island Phase 3	8 Pak Lai Road, Ma Wan	JV	1451	1451
2005	The Pacifica	9 Sham Shing Road, Cheung Sha Wan	50	2285	1142.5
2005	Central Heights	9 Tong Tak Street, Tseung Kwan O	25	390	97.5
				5202	3767
2006	Harbour Green	8 Sham Mong Road, West Kowloon	JV	1517	1517
2006	The Vineyard	23 Ngau Tam Mei Road, Yuen Long	100	160	160
2006	Manhattan Hill	1 Po Lun Street, West Kowloon	33	1162	383.46
2006	Park Island Phase 5	8 Pak Lai Road, Ma Wan	JV	1230	1230
2006	Noble Hill	38 Ma Sik Road, Sheung Shui	100	796	796
2006	Chelsea Court	100 Yeung Uk Road, Tsuen Wan	100	1624	1624
2006	1 Ho Man Tin Hill	1 Ho Man Tin Hill Road	JV	112	112
				6601	5822

Developments of Cheung Kong (Holdings) Limited

Year	Development Name	Location	Group 's Interest	No. of units	Attributable Units to the Group
1995	South Horizons: Phase 4 (The Oasis)	Ap Lei Chau, I.L. No. 121 R.P. Hong Kong	30	2520	756
1995	The Grand Panorama (Phase 2, Blocks 2 and 3)	10 Robinson Road, Hong Kong	50	558	279
1995	Kenswood Court, Kingswood Villas (Blocks 8 to 14)	Tin Shui Wai Town Lot No.7 R.P. Yuen Long	48.25	1985	957.7625
				5063	1993
1996	University Heights	23 Pokfield Road, Pokfulam	50	444	222
1996	Lynwood Court, Kingswood Villas (Blocks 1 to 10)	Tin Shui Wai Town Lot No.5 Yuen Long	48.25	2865	1382.3625
				3309	1604
1997	Maywood Court, Kingswood Villas (Blocks 1-8)	Tin Shui Wai Town Lot No.6	48.25	2305	1112
1998	The Paramount	Tai Po Town Lot. No. 97	35	123	43.05
1998	DeerHill Bay	Tai Po Town Lot. No. 135	JV	364	364
1998	Tierra Verde Phase I	Tsing Yi Town Lot. No. 132	JV	1474	1474
1998	Laguna Verde: The GreenWood	Kowloon Inland Lot. No. 11056	JV	741	741
1998	Villa Esplanada Phase I	Tsing Yi Town Lot. No. 129	22.5	792	178.2
1998	Vista Paradiso Phase I	Sha Tin Town Lot. No. 338	50	1012	506
				4506	3306
1999	Vista Paradiso Phase II	Sha Tin Town Lot. No. 338	50	1020	510
1999	Villa d' Arte	Inland Lot. No. 8857	90	100	90
1999	Tierra Verde Phase II	Tsing Yi Town Lot. No. 132	JV	2084	2084
1999	Laguna Verde: Villa Verde	Kowloon Inland Lot. No. 11056	JV	728	728

Appendix 1: Development Details by Developers

1999	The Portofino	Lot. No. 849 in D.D. 225 Clear Water Bay	100	72	72
1999	Villa Esplanada Phase II	Tsing Yi Town Lot. No. 129	22.5	832	187.2
				4836	3671
2000	Manhattan Heights	Marine Lot No. 245 s.E, R.P., s.B R.P., s.B ss. 1 R.P., s.B ss. 2 and s.B ss. 1 s.A	44.8	476	213.248
2000	Peninsula Heights	New Kowloon Inland Lot. No. 5104	50	178	89
2000	Laguna Verde: Costa del Sol	Kowloon Inland Lot. No. 11056	JV	1104	1104
2000	Monte Vista	Sha Tin Town Lot No. 446	50	1606	803
2000	Sheffield Villas	Lot No. 4295 in D.D. 124 Yuen Long	50	56	28
				3420	2237
2001	Green Wood Laguna Verde (Blocks 1-5)	Kowloon Inland Lot. No. 11056	JV	741	741
2001	No.1 Star Street	The Remaining Portion of Section A of Inland Lot No. 2837	100	170	170
2001	Villa Esplanada Phase III	Tsing Yi Town Lot No. 11077	22.5	1200	270
2001	University Court	Section A of New Kowloon Inland Lot No. 2491	100	37	37
2001	Laguna Grande, Laguna Verde	Kowloon Inland Lot No. 11056	JV	1380	1380
2001	Ocean Vista, Laguna Verde	Kowloon Inland Lot No. 11056	JV	785	785
2001	Harbourfront Landmark	Kowloon Inland Lot No. 11055	50	330	165
				4643	3548
2002	Carribbean Coast: Monterey Cove	Tung Chung Town Lot No.5	JV	1552	1552
2002	The Metropolis Residence	Kowloon Inland Lot No. 11077	JV	662	662
2002	Nob Hill	Kwai Chung Town Lot No. 474	50	696	348
2002	Queen's Terrace Tower 3	The Remaining Portion of Inland Lot No. 8897	JV	306	306
2002	The Victoria Towers	The Rhe Remaining Portion of Kowloon Inland Lot No. 11086	42.5	988	419.9
				4204	3288

Appendix 1: Development Details by Developers

2003	Banyan Garden Phase I	New Kewloon Inland lot No. 6320	JV	1072	1072
2003	Queen's Terrace Towers 1 and 2	The Remaining Portion of Inland Lot No. 8897	JV	870	870
2003	Hampton Place	Kowloon Inland Lot No. 11107	100	880	880
2003	Princeton Tower	The Remaining Portions of Inland Lots Nos. 3999-4005	100	156	156
2003	Rambler Crest	Tsing Yi Town Lot No. 140	30	1590	477
2003	Seasons Villas	The Remaining Portion and The Extension thereto of Lot No. 815 in D.D. 110 Yuen Long	100	112	112
				4680	3567
2004	Banyan Garden Phases 2 and 3	New Kowloon Inland Lot No. 6320	JV	1456	1456
2004	Caribbean Coast: Albany Cove	Tung Chung Town Lot No.5	JV	1240	1240
2004	The Cairnhill	Tsuen Wan Town Lot No. 395	50	771	385.5
2004	One Beacon Hill	New Kowloon Inland Lot No. 6277	100	607	607
2004	Sky Tower	The Remaining Portion of Kowloon Inland Lot No. 27	40	2209	883.6
2004	Vianni Cove	Tin Shui Wai Town Lot No. 27	60	1091	654.6
				7374	5227
2005	The Pacifica Phases 1 and 2	New Kowloon Inland Lot No. 6275	50	2285	1142.5
2005	Caribbean Coast: Carmel Cove	Tung Chung Town Lot No.5	JV	1664	1664
2005	St. Paul Terrace	No. 42A MacDonnell Road	100	9	9
				3958	2816
2006	The Legend	Jardine's Lookout	100	380	380
2006	Caribbean Coast: Crystal Cove	Tung Chung	JV	824	824
2006	Central Park Towers Phase 1	Tin Shui Wai Town Lot No. 24	98.47	1972	1941.8284
2006	Metro Town Phase 1	Tseung Kwan O Town Lot no. 73, Area 73B Tseung Kwan O	JV	1678	1678
2006	Seasons Palace	The Remaining Portion of Lot no. 2286 in	100	104	104

Appendix 1: Development Details by Developers

		D.D. 106 Kam Sheung Road, Kam Tin, Yuen Long			
				4958	4928

Developments of Henderson Land Development Company Limited

Year	Development Name	Location	Group 's Interest	No. of units	Attributable Units to the Group
1995	Royal Court	9M Kennedy Road	64.14	186	119
1995	Flora Plaza	Fanling Sheung Shui Town Lot No. 113	60	2710	1626
1995	The Grand Panorama (Phase 2)	10 Robinson Road	50	304	152
1995	Tak Lee Court	10-16 Ko Shan Road	48.54	48	23
1995	Skyline Plaza	Tsuen Wan Town Lot No. 324	100	280	280
				3528	2201
1996	Dragon Court	28 Caine Road	100	52	52
1996	Metro City (Phase 1)	Town Lot No. 36, Tseung Kwan O	100	2048	2048
1996	The Tolo Place, Sunshine City	Sha Tin Town, Lot No. 392	100	616	616
1996	Fairview Height	1-3 Seymour Road/ 54-62 Robinson Road	87.3	198	173
1996	Winsome Park	42 Conduit Road/ 69A, 69C, 69D & 69E Robinson Road	85	120	102
1996	Imperial Court	62G Conduit Road	100	196	196
1996	Florence Plaza (Phase 1)	New Kowloon Inland Lot No. 6154	90.79	198	180
1996	Lagoon Court	Tai Po Town Lot No. 126	100	136	136
				3564	3503
1997	Newton Harbour View (Tower 1)	2 Shau Kei Wan Main Street East (Shau Kei Wan Inland Lot Nos. 825 and 835)	100	98	98
1997	Hop Yick Plaza (Block B)	Yuen Long Town Lot No. 488	100	64	64
1997	Silver Mansion	75-81 Shek Pai Wan Road	100	54	54
1997	Charmview Court	73 Pokfulam Road	100	48	48
1997	Welland Plaza	184-200 Nam Cheong Street	100	88	88
1997	Granville Garden	Sha Tin Town, Lot No. 410	100	666	666
				1018	1018
1998	Fu Yan Court	23 Sai Wan Ho Street	100	88	88

Appendix 1: Development Details by Developers

1998	Evergreen Place	Lot No. 2042 in D.D. No. 121, Yuen Long	60	88	53
1998	Belair Monte	Fanling Sheung Shui Town Lot No. 126	13	1680	218
1998	Greenfields	Yuen Long Town Lot No. 463	7	480	34
				2336	393
1999	Imperial Terrace	356 Queen's Road West	100	88	88
1999	The Gracedale	23 Yuk Sau Street	100	50	50
1999	Tung Chung Crescent - Blocks 1, 2, 3, 5, 6	Tung Chung Town Lot No. 1	20	1212	242
1999	Casa Marina	Tai Po Town Lot No. 117	100	98	98
1999	La Cité Noble	Tseung Kwan O Town Lot No. 40	100	2184	2184
1999	Dawning Views	Fanling Sheung Shui Town Lot No. 193	100	2688	2688
1999	The City Culture	38A Ko Shan Road	100	19	19
1999	Newton Harbour View - Tower II	2 Shau Kei Wan, Main Street East (Shau Kei Wan Inland Lot No. 825 R.P.)	100	224	224
1999	Honor Villa	75 Caine Road	44.58	78	35
1999	The Metropolis (Metro City - Phase III)	Tseung Kwan O Town Lot No. 34	100	1376	1376
1999	Tung Chung Crescent - Blocks 7 to 9	Tung Chung Town Lot No. 1	20	991	198
				9008	7202
2000	King's Park Hill	1-98 King's Park Hill Road (Kowloon Inland Lot No. 11063)	59.57	128	76
2000	Metro City - Phase II	Tseung Kwan O Town Lot No. 27	100	3344	3344
2000	Parkland Villas - Blocks 1 to 6	Tuen Mun Town Lot No. 377 R.P.	75.01	1152	864
2000	Casa Marina II	1 Lo Ping Road, Tai Po (Tai Po Town Lot No. 118)	100	106	106
2000	Palatial Crest	3 Seymour Road	63.35	189	120
2000	Casa Bella	117 Caine Road, Mid-Levels, Hong Kong	50	124	62
2000	Parkland Villas – Blocks 7 to 9	1 Tuen On Lane, Tuen Mun (Tuen Mun Town Lot No. 377 R.P.)	75.01	576	432
				5619	5004

Appendix 1: Development Details by Developers

2001	Royal Peninsula	8 Hung Lai Road (Kowloon Inland Lot No. 11084)	50	1669	835
2001	Metropolitan Rise	28 Ma Tau Kok Road	80	288	230
2001	Sereno Verde – Phase 1	99 Tai Tong Road, Yuen Long	44	721	317
2001	Supernova Stand	28 Mercury Street	36.38	100	36
				2778	1419
2002	Sereno Verde – Phase 2 (Blocks 9 & 10)	99 Tai Tong Road, Yuen Long	44	216	95
2002	Wealth House	108 Castle Peak Road	100	34	34
2002	Opulence Height	50 Castle Peak Road, Yuen Long	15.2	112	17
2002	The Beverly Hills- Phases 1 & 2	Tai Po Town Lot No. 161	90.1	372	335
2002	Royal Terrace	933's King Road	100	240	240
2002	Aegean Coast	2 Kwun Tsing Road, So Kwun Wat, Castle Peak Road	25	1624	406
2002	City Regalia	198 Yee Kuk Street	100	80	80
2002	Sereno Verde – Phase 2 (Blocks 13, 15 & 16) & La Pradera – Phases 3 & 4	99 Tai Tong Road, Yuen Long	44	312	137
				2990	1345
2003	Seaview Crescent	8 Tung Chung Waterfront Road, Tung Chung (Tung Chung Town Lot No. 3)	20	1537	307
2003	Park Central – Phases 1 & 2	Tseung Kwan O Town Lot Nos. 57 and 66	24.63	4152	1023
2003	Metro Harbour View – Phase 1	8 Fuk Lee Street	73.02	1760	1285
2003	Paradise Square	3 Kwong Wa Street	100	272	272
2003	Metro Harbour View - Phase 2	8 Fuk Lee Street	73.02	1760	1285
2003	Scenic Horizon	250 Shau Kei Wan Road	18.13	100	18
				9581	4190
2004	9 Durham Road	9 Durham Road	100	4	4

Appendix 1: Development Details by Developers

2004	Splendid Place	16 Shipyard Lane/ 39 Taikoo Shing Road	75	142	107
				146	111
2005	Park Central — Phase 3 (Central Heights)	Tseung Kwan O Town Lot Nos. 57 and 66	25	390	98
2005	The Sherwood	8 Fuk Hang Tsuen Road, Tuen Mun	100	1584	1584
2005	The Verdancy	50 Tan Kwai Tsuen, Yuen Long	100	119	119
2005	Royal Green — Phase 1	18 Ching Hiu Road, Sheung Shui	45	640	288
2005	Grand Promenade — Towers 2, 3 & 5	38 Tai Hong Street, Sai Wan Ho	63.65	1144	728
2005	Grand Promenade - Towers 1 & 6	38 Tai Hong Street, Sai Wan Ho	63.06	892	562
				4769	3379
2006	Centre Stage	108 Hollywood Road and 1-17 Bridges Street	100	407	407
2006	Centre Place	1 High Street	100	95	95
2006	Royal Green – Phase 2	18 Ching Hiu Road, Sheung Shui	45	282	127
2006	Grand Waterfront	38 San Ma Tau Street, To Kwa Wan	46.08	1783	822
				2567	1451

Developments of Sino Group

Year	Development Name	Location	Group 's Interest	No. of units	Attributable Units to the Group
1995	Serenity Park II	Tai Po Town Lot No. 80, New Territories	4.6%	491	23
1995	The Astrid	Argyle Street, Kowloon, KIL No. 11005	50.0%	176	88
1995	Parc Royale	Area 30A, Shatin, New Territories, STTL No. 301	22.0%	640	141
1995	Sea Crest Terrace	Mui Wo Lot No. 717	100.0%	45	45
				1352	296
1996	Dynasty View (Phase 1)	Ma Wo, Tai Po, New Territories, Tai Po Town Lot No. 113	100.0%	265	265
1996	38 Repulse Bay Road	38 Repulse Bay Road, Hong Kong	100.0%	6	6
				271	271
1997	The Mayfair	1, May Road, Hong Kong Inland Lot No. 8410	100.0%	60	60
1997	The Waterside	Ma On Shan, Shatin, New Territories, Sha Tin Town Lot No. 393	40.0%	502	201
1997	Grand Palisades	Tai Po, New Territories, Tai Po Town Lot No. 137	20.0%	547	109
1997	Grand Dynasty View	Ma Wo, Tai Po, New Territories, Tai Po Town Lot No. 111	100.0%	376	376
				1485	746
1998	Maritime Bay	Tseung Kwan O, New Territories, TKOTL 49	50.0%	736	368
1998	Villa Oceania	Ma On Shan, New Territories, STTL 428 Area 100	50.0%	551	276
1998	Majestic Park	Farm Road, Kowloon, KIL 11044	20.0%	476	95
1998	Greenfields	Yuen Long, New Territories, YLTL 463	12.9%	480	62
1998	Belair Monte	Fanling, New Territories, FSSTL 126	8.0%	1680	134
				3923	935

Appendix 1: Development Details by Developers

1999	Dynasty Heights	Lung Ping Road, Kowloon, NKIL 5924	50.0%	590	295
1999	Bayview Park	Hong Man Street, Chai Wan, Hong Kong, CWIL 156	100.0%	212	212
				802	507
2000	Island Harbourview	MTR Olympic Station, Site C, Kowloon, KIL 11074	30.0%	2464	739
2000	Springdale Villas	Ma Tin Road, Yuen Long, New Territories, YLTL 491	100.0%	204	204
2000	Shek O Headland	Hong Kong, SOIL 96	100.0%	1	1
				2669	944
2001	Park Avenue: Phase 2 (Central Park)	KIL 11090, 18 Hoi Ting Road, MTR Olympic Station, Kowloon	42.5%	1336	568
2001	Island Resort	28 Siu Sai Wan Road, Chai Wan, Hong Kong	40.0%	3109	1244
2001	Park Avenue: Phase 1	18 Hoi Ting Road, MTR Olympic Station Site B, Kowloon, KIL11090	42.5%	1660	706
				6105	2517
2002	Horizon Place	100 Kwai Luen Road, Kwai Chung, New Territories	100.0%	372	372
2002	Sky Horizon	35 Cloud View Road, North Point, Hong Kong	100.0%	108	108
				480	480
2003	Ocean View	1 Po Tai Street, Area 77, Ma On Shan, New Territories	100.0%	911	911
2003	Imperial Villas Phase I & II	1 & 8 Ping Chuk Lane, Ping Shan, Yuen Long, New Territories	100.0%	299	299
2003	The Cliveden	98 Route Twisk, Area 40, Tsuen Wan, New Territories	50.0%	211	106
2003	Grand Regentville	9 Wo Mun Street, Fanling, New Territories	100.0%	666	666
				2087	1982
2004	Residence Oasis	TKOTL No. 24, 15 Pui Shing Road,	60.0%	2134	1280

Appendix 1: Development Details by Developers

		Tseung Kwan O			
2004	Oceania Heights	2 Hoi Chu Road, Tuen Mun	100.0%	544	544
2004	The Cairnhill	Route Twisk, TWTL 395, Area 40, Tsuen Wan	25.0%	771	193
2004	The Royal Oaks	8 Kam Tsin South Road, Kam Tsin Lodge, Sheung Shui	100.0%	44	44
2004	Anglers' Bay	18A Castle Peak Road, Sham Tseng, New Territories	50.0%	249	125
2004	Caldecott Hill	2 Caldecott Road, Piper's Hill, Kowloon	33.3%	88	29
2004	Parc Palais	18 Wylie Road, King's Park, Kowloon	30.0%	700	210
				4530	2425
2005	St Andrews Place	38 Kam Chui Road, Beas Stable, Sheung Shui	100.0%	26	26
2006	One SilverSea	18 Hoi Fai Road	100.0%	730	730
2006	Mount Beacon	20 Cornwall Street, Kowloon Tong, Kowloon	33.0%	220	73
				950	803

Developments of New World Development Company

Year	Development Name	Location	Group 's Interest	No. of units	Attributable Units to the Group
1995	Li Chit Garden	1 Li Chit Street, Wan Chai	100%	180	180
1995	Blessings Garden Phase 1	95 Robinson Road, Mid-Levels	100%	174	174
1995	Blessings Garden Phase 2	56 Conduit Road, Mid-Levels	100%	174	174
				528	528
1996	Crestmont Villa (low-rise)	Phase IV, 4A East, Discovery Bay	100%	190	190
1996	Coastline Villa (low-rise)	Phase IV, 4C, Discovery Bay	100%	230	230
1996	Scholastic Garden	48 Lyttelton Road, Mid-Levels	100%	280	280
				700	700
1997	Ko Chun Court	11 High Street	100%	26	26
1997	Discovery Park Phase One	398 Castle Peak Road Tsuen Wan	50%	1120	560
				1146	586
1998	Discovery Park Phase Two	398 Castle Peak Road Tsuen Wan	50%	1120	560
1998	Discovery Park Phase Three	398 Castle Peak Road Tsuen Wan	50%	1120	560
1998	Belair Monte	Luen Wo Hui, Fanling	12%	1680	202
1998	Greenfields	YLTL 463 Fung Kam Street, Yuen Long	7%	480	34
				4400	1355
1999	Harmony Garden	28 Luen Yan Street	100%	240	240
1999	Tung Chung Crescent Phase 1	1 Hing Tung Street	16.40%	680	112
1999	Tung Chung Crescent Phase 2	2 Mei Tung Street	16.40%	1523	250
				2443	601
2000	Villa Carlton	369 Tai Po Road, KLN	50%	126	63

Appendix 1: Development Details by Developers

2000	Dragon Pride	Tin Hau Temple Road	60%	96	58
2000	Rhythm Garden	242 Choi Hung Road	80.50%	3000	2415
2000	Bijou Court	171 Prince Edward Road West	50%	84	42
				3306	2578
2001	The Belcher's	89 Pok Fu Lam Road	10%	2214	221
2001	Monte Carlton	363 Tai Po Road, KLN	100%	82	82
2001	Sereno Verde Phase 1	99 Tai Tong Road, Yuen Long, NT	56%	721	404
2001	The Parcville	33 Kau Hui Road, Yuen Long	33.33%	1618	539
				4635	1246
2002	11-15 MacDonnell Rd	11-15 MacDonnell Rd, HK	33%	28	9
2002	Sereno Verde Phase 2	99 Tai Tong Road, Yuen Long, NT	56%	528	296
				556	305
2003	Queen's Terrace	Queen Street, Sheung Wan, HK	50%	1176	588
2003	Seaview Crescent	8 Tung Chung Waterfront Road, Tung Chung	16.40%	1537	252
2003	Bijou Apartments	157 Prince Edward Road West	50%	171	86
				2884	926
2004	Sky Tower	38 Sung Wong Toi Road, To Kwa Wan	20%	2209	442
2004	Parc Palais	18 Wylie Road, King's Park Road	30%	700	210
2004	2 Park Road	2 Park Road	100%	152	152
2004	Bon-Point	11 Bonham Road, Mid-level	70%	128	90
2004	Caldecott Hill	2 Caldecott Road	33.33%	88	29
2004	33 Island Road	33 Island Road, Deep Water Bay, Southern District	43%	10	4
				3287	927
2005	South Hill Crest	3 Tuen Kwai Road, Fu Tei	96.46%	310	299
2005	The Merton	28 Kennedy Town New Praya, 8 Davies Street	100%	1184	1184
				1494	1483
2006	The Grandiose	9 Tong Chun Street, Tseung Kwan O	45%	1472	662

Developments of Hang Lung Properties Limited

Year	Development Name	Location	Group 's Interest	No. of units	Attributable Units to the Group
1996	Parc Versailles	Mui Shu Hang Road, Tai Po	100%	822	822
1998	Noble Place	King Fung Path, Tuen Mun	100%	448	448
2000	Baycrest	Hang Ming Street, Ma On Shan	100%	618	618
2002	The Summit	Stubbs Road, Happy Valley	100%	54	54
2002	Napa Valley	Tuen Fu Road, Tuen Mun	100%	98	98
2002	New Haven	Sha Tsui Road, Tsuen Wan	100%	658	658
				810	810
2003	Carmel-on-the-Hill	Carmel Village Street, Ho Man Tin	100%	188	188
2003	The Harbourside	Union Square, Airport Express Kowloon Station	JV	1122	1122
2003	Aqua Marine	Sham Shing Road, West Kowloon	100%	1616	1616
				2926	2926
2004	The Long Beach	Hoi Fai Road, West Kowloon	100%	1829	1829

Developments of Wheelock and Company Limited

Year	Development Name	Location	Group 's Interest	No. of units	Attributable Units to the Group
1995	The Astrid	180 Argyle Street	50%	176	88
1995	The Regalia	33 King's Park Rise	100%	302	302
				478	390
1996	Forest Hill	31 Lo Fai Road	100%	328	328
1998	Galaxia	3 Lung Poon Street	100%	1684	1684
2000	The Primrose	38 Rose Street	100%	16	16
2002	Sorrento Phase 1	1 Austin Road West	100%	1272	1272
2003	Bellagio Phase 1	33 Castle Peak Road	100%	1704	1704
2003	Palm Cove	168 Castle Peak Road	100%	260	260
2003	Sorrento Phase 2	1 Austin Road West	100%	854	854
				2818	2818
2004	Parc Palais	18 King's Park Wylie Road	20%	700	140
2006	Bellagio Phase 2	33 Castle Peak Road	100%	848	848
2006	Bellagio Phase 3	33 Castle Peak Road	100%	799	799
2006	Gough Hill Residences	3-5 Gough Hill Path	100%	5	5
2006	60 Victoria Road	60 Victoria Road	100%	82	82
				1734	1734

Developments of Kerry Properties Limited

Year	Development Name	Location	Group 's Interest	No. of units	Attributable Units to the Group
1997	111 High Street	111 High Street	100%	22	22
1998	Valverde	11 May Road, Mid-Levels, Hong Kong	100%	82	82
1998	Greenfields	Fung Kam Street, Yuen Long, New Territories	7%	480	34
				562	116
1999	Tavistock	10A Tregunter Path 10A	100%	98	98
1999	Aigburth	12 Tregunter Path, Mid-Levels, Hong Kong	100%	65	65
1999	Tavistock II	10A Tregunter Path 10A	100%	98	98
				261	261
2000	Ocean Pointe	8 Sham Tsz Street	100%	558	558
2000	Island Harbourview, Olympian City	11 Hoi Fai Road	20%	2412	482
				2970	1040
2001	Park Avenue, Olympian City	18 Hoi Ting Road	33%	1625	528
2001	Central Park, Olympian City	18 Hoi Ting Road	33%	1312	426
				2937	955
2002	Constellation Cove	1 Hung Lam Drive, Tai Po Kau, Tai Po, New Territories	75%	286	215
2002	Jupiter Terrace	18 Jupiter Street, North Point, Hong Kong	100%	188	188
				474	403

Appendix 1: Development Details by Developers

2003	The Cliveden	98 Route Twisk	50%	210	105
2004	Residence Oasis	15 Pui Shing Road	40%	2134	854
2004	Branksome Crest	3A Tregunter Path	100%	64	64
				2198	918
2006	15 Homantin Hill	15 Homantin Hill Road	100%	73	73

Developments of Hutchison Whampoa Limited

Year	Development Name	Location	Group 's Interest	No. of units	Attributable Units to the Group
1995	South Horizons: Phase 4 (The Oasis)	Ap Lei Chau, I.L. No. 121 R.P. Hong Kong	70%	2520	1764
1998	The Paramount	23 Shan Tong Road	35%	123	43
1998	Vista Paradiso Phase 1	Sha Tin Town Lot. No. 338	50%	1012	506
				1135	549
1999	Tierra Verde	Tsing Yi Airport Railway Station, New Territories	60%	3558	2135
1999	Vista Paradiso Phase 2	Sha Tin Town Lot. No. 338	50%	1020	510
1999	Monte Vista	Ma On Shan, New Territories	50%	1606	803
				6184	3448
2000	Peninsula Heights	77 Boardcast Drive, Kowloon	50%	178	89
2001	Harbourfront Landmark	Wan Hoi Street, Hung Hom	50%	330	165
2002	Caribbean Coast: Phase 1 (Monterey Cove)	Tung Chung, New Territories	50%	1552	776
2002	The Victoria Towers	Canton Road, Kowloon	43%	988	425
				2540	1201
2003	Rambler Crest	Tsing Yi Town Lot No. 140	70%	1590	1113
2004	Caribbean Coast: Phase 2 (Albany Cove)	Tung Chung, New Territories	50%	1240	620
2005	Caribbean Coast: Phase 3 (Carmel Cove)	Tung Chung, New Territories	50%	1664	832
2006	Caribbean Coast: Phase 4 (Crystal Cove)	Tung Chung, New Territories	50%	824	412

Appendix 2: List of Large-Scale Private Residential Development

Development Project	Developer	Units	Blocks	Storeys
Sea Crest Villa	Sun Hung Kai	2224	13	28-37
Pristine Villa	Sun Hung Kai	498	14	8-10
Royal Ascot	Sun Hung Kai	2504	10	37-40
East Point City	Sun Hung Kai	2184	7	39
Grand Del Sol	Sun Hung Kai	1100	13	11
Symphony Bay	Sun Hung Kai	972	26	6-12
Villa Esplanada	Sun Hung Kai	2824	10	35-40
Tung Chung Crescent	Sun Hung Kai	2203	8	30-43
The Belcher's	Sun Hung Kai	2214	6	47-48
The Parcville	Sun Hung Kai	1618	14	13-15
Ocean Shores	Sun Hung Kai	5728	15	48
Park Island	Sun Hung Kai	5252	28	25-26
Park Central	Sun Hung Kai	4542	12	48
Liberte	Sun Hung Kai	2439	7	37-46
The Pacifica	Sun Hung Kai	2285	6	45-51
YOHO Town	Sun Hung Kai	2201	8	37
South Horizons	Cheung Kong	9812	34	35-40
Kingswood Villas	Cheung Kong	15924	58	32-39
DeerHill Bay	Cheung Kong	364	32	5-11
Tierra Verde	Cheung Kong	3558	12	38-40
Laguna Verde	Cheung Kong	4738	25	19-33
Villa Esplanada	Cheung Kong	2824	10	35-40
Vista Paradiso	Cheung Kong	2032	11	23-30
Monte Vista	Cheung Kong	1606	12	26-30
Caribbean Coast	Cheung Kong	5280	13	49-52
Banyan Garden	Cheung Kong	2528	7	48-49
The Cairnhill	Cheung Kong	771	16	12
One Beacon Hill	Cheung Kong	607	16	12
Sky Tower	Cheung Kong	2209	6	47
The Pacifica	Cheung Kong	2285	6	45-51
Metro Town	Cheung Kong	3774	9	53-55
Flora Plaza	Henderson	2710	34	10
Metro City	Henderson	6768	21	38-43

Appendix 2: List of Large-Scale Private Residential Development

Sunshine City	Henderson	4760	20	29-33
Tung Chung Crescent	Henderson	2203	8	30-43
La Cité Noble	Henderson	2184	6	44-47
Dawning Views	Henderson	2688	12	29
Sereno Verde	Henderson	1674	16	13-14
Park Central	Henderson	4542	12	48
Metro Harbour View	Henderson	3520	10	44
The Sherwood	Henderson	1584	12	16-17
Grand Promenade	Henderson	2052	5	62-65
Discovery Park	NWD	3360	12	40
Tung Chung Crescent	NWD	2203	8	30-43
Rhythm Garden	NWD	3000	12	22-30
The Belcher's	NWD	2214	6	47-48
Sereno Verde	NWD	1674	16	13-14
The Parcville	NWD	1618	14	13-15
Sky Tower	NWD	2209	6	47
Serenity Park	Sino	2476	15	21-22
Parc Royale	Sino	640	11	19-20
Dynasty View	Sino	1436	27	8-12
Dynasty Heights	Sino	590	22	5-11
Island Harbourview	Sino	2464	9	35-39
Park Avenue	Sino	2996	9	42-45
Island Resort	Sino	3109	8	50-51
Residence Oasis	Sino	2134	6	48-49
The Cairnhill	Sino	771	16	12
Sorrento	Wheelock	2126	5	55-65
Bellagio	Wheelock	3351	8	54
Island Harbourview	Kerry	2464	9	35-39
Residence Oasis	Kerry	2134	6	48-49
Park Avenue	Kerry	2996	9	42-45

Appendix 3: Land sales records from 1999-2007

Auction Date	Location	Use	Winning Bid (million)	Buildable area (sq. ft.)	Winner
20/04/1999	35 & 37 CLOUD VIEW RD	R2	590.0	134,225	Sino Group
20/04/1999	83 BROADCAST DRIVE	R2	515.0	137,000	K. Wah
20/04/1999	AREA 58, SIU LAM, TUEN MUN	R3	385.0	270,316	Nan Fung
29/06/1999	NOS. 1-3 HOMESTEAD ROAD, THE PEAK	R3	265.0	32,292	Small Developer (Kwai Hung Group)
29/06/1999	KWAI LUEN ROAD, KWAI CHUNG	R1	470.0	220,682	Sino Group
29/06/1999	AREA 12, TAI PO	R3	44.0	13,490	Small Developer (Glory Fortune Development Limited)
8/4/1999	No. 99 PEAK ROAD/NO.4 GOUGH HILL PATH, THE PEAK	R3	134.0	13,251	Small Developer (Prudential)
8/4/1999	CASTLE PEAK ROAD, AREA 58, SIU LAM, TUEN MUN	R3	330.0	236,985	Small Developer (USI, Manhattan Garments and Singapore Financial Group)
8/4/1999	HANG KWAI STREET, AREA 16, TUEN MUN	R1	320.0	250,000	K. Wah
8/4/1999	SAI WAN, CHEUNG CHAU	R4	4.5	9,171	Small Developer
14/10/1999	TIN SHUI WAI, YUEN LONG	R1	555.0	801,972	Cheung Kong
14/10/1999	ADJOINING NO. 14 SOUTH BAY ROAD	R3	151.0	21,959	Small Developer (怡華益新)
13/12/1999	HOI FAN ROAD, WEST KOWLOON RECLAMATION	R1	1,340.0	565,020	Cheung Kong
13/12/1999	AREA 38, TAI PO	R3	152.0	96,781	Small Developer (Emperor Group)
29/02/2000	SEVERN ROAD, HONG KONG	R3	490.0	58,665	Sun Hung Kai
29/02/2000	YIU HING ROAD, SHAUKEIWAN, HONG KONG	R1	170.0	75,848	Small Developer (Asia Standard Group)

29/02/2000	CHEUNG SHA, LANTAU ISLAND	R4	17.2	14,553	Small Developer (Tack Hsin Holdings)
25/04/2000	JUNCTION OF HING WAH STREET WEST & SHAM SHING ROAD, WEST KOWLOON RECLAMATION	R1	1,900.0	1,556,245	Cheung Kong
25/04/2000	ADJOINING NOS. 16-18 SOUTH BAY ROAD, REPULSE BAY	R3	130.0	18,644	Small Developer (Higo Force Company Ltd.)
6/12/2000	JUNCTION OF CARMEL VILLAGE STREET AND HAU MAN STREET, KOWLOON	R1	251.0	137,618	Hang Hung Development
6/12/2000	BEAS STABLE, SHEUNG SHUI, NEW TERRITORIES	R4	93.0	99,000	Sino Group
29/08/2000	AREA 77, MA ON SHAN, NEW TERRITORIES	R2	865.0	612,472	Sino Group
29/08/2000	AREA 40, ROUTE TWISK, TSUEN WAN, NEW TERRITORIES	R3	292.0	225,750	Kerry Properties and Sino Group
10/5/2000	AREA 40, ROUTE TWISK, TSUEN WAN	R3	835.0	827,658	Cheung Kong, Kerry Properties and Sino Group
10/5/2000	J/O FARM ROAD AND MA TAU WAI ROAD, MA TAU WAI	R1	540.0	268,000	Sun Hung Kai
10/5/2000	SHAM TSENG, TSUEN WAN	R3	240.0	177,335	Kerry Properties and Sino Group
12/7/2000	HOI FAI ROAD, WEST KOWLOON RECLAMATION, KOWLOON	R1	2,580.0	151,500	Hang Hung Development
12/7/2000	CHUK KOK, SAI KUNG, NEW TERRITORIES	R4	21.0	12,000	Small Developer (Far East Consortium International Limited)
19/02/2001	AREA 77, MA ON SHAN, SHA TIN, NEW TERRITORIES	R2	560.0	392,886	K. Wah
19/02/2001	TUI MIN HOI, SAI KUNG, NEW TERRITORIES	R3	73.5	41,500	Small Developer (健聯發展)
19/06/2001	J/O LOK HA SQUARE, LOK LIN PATH, AREA 43, SHA TIN	R3	38.5	29,170	Small Developer (Yu Tai Hing)
19/06/2001	SZE PEI SQUARE, TSUEN WAN	CR	41.0	23,078	Small Developer (榮國集團)
13/08/2001	MAN KEI TOI, PAK SHA WAN, SAI KUNG	R3	148.0	115,000	Small Developer (USI)
13/08/2001	OFF PING CHUK LANE, PING SHAN, YUEN LONG	R1	44.0	72,100	Sino Group

16/10/2001	2 & 4 CALDECOTT ROAD, PIPER'S HILL, KOWLOON	R3	110.0	77,000	New World Development and Sino Group
16/10/2001	TAI MONG TSAI, SAI KUNG, NEW TERRITORIES	R4	23.5	20,000	Small Developer (Wing Fung)
12/4/2001	3 CALDECOTT ROAD, PIPER HILL, KOWLOON	R3	170.0	83,000	K. Wah
12/4/2001	OFF PING CHUK LANE, PING SHAN, YUEN LONG, NEW TERRITORIES	R1	62.0	107,000	Sino Group
2/4/2002	HOI CHU ROAD, AREA 16, TUEN MUN, NEW TERRITORIES	R1	264.0	380,000	Sino Group
2/4/2002	AREA 11, TAI PO KAU, TAI PO, NEW TERRITORIES	R3	37.0	27,125	Small Developer (Law's Group)
15/04/2002	HOI FAI ROAD, WEST KOWLOON RECLAMATION, KOWLOON	R1	1,640.0	840,000	Sino Group
15/04/2002	JUNCTION OF CORNWALL STREET AND TAT CHEE AVENUE, KOWLOON	R3	570.0	301,177	Sino Group, China Estates Holdings
15/04/2002	No. 2 LOK KWAI PATH, AREA 43, SHA TIN, NEW TERRITORIES	R3	660.0	436,265	Nan Fung, Winstate Asia
15/04/2002	CAPE ROAD, CHUNG HOM KOK, HONG KONG	R3	100.0	30,000	Small Developer (Tai Cheung)
17/06/2002	NO. 632 KING'S ROAD, NORTH POINT, HONG KONG	R1	310.0	159,784	Nan Fung
17/06/2002	KONG PUI STREET, AREA 5B, SHA TIN, NEW TERRITORIES	R1	112.0	84,831	Small Developer (Law's Group)
9/10/2002	SA PO ROAD, KOWLOON	R1	290.0	223,229	Chinachem
9/10/2002	47 SHEK PAI WAN ROAD, ABERDEEN, HONG KONG	CR	83.0	77,620	Small Developer (Yu Tai Hing)
25/5/2004	AREA 77, MA ON SHAN, SHA TIN, NEW TERRITORIES	R2	2,090.0	753,000	Cheung Kong
25/5/2004	TUNG LO WAN HILL ROAD, SHA TIN, NEW TERRITORIES	R2	865.0	260,800	K. Wah
15/6/2004	SA PO ROAD, KOWLOON	R1	1,010.0	341,100	Chinachem
10/12/2004	SHEUNG SHING STREET, HOMANTIN, KOWLOON	R1	9,420.0	1,720,000	Cheung Kong
10/12/2004	JUNCTION OF KING FUK STREET, KING TAI STREET AND PRINCE EDWARD ROAD EAST, SAN PO KONG, KOWLOON	R1	4,700.0	1,230,044	Sun Hung Kai

27/9/2005	HOI TING ROAD, WEST KOWLOON RECLAMATION AREA	R1	3,190.0	597,154	Sino Group
27/9/2005	JUNCTION OF HOI WANG ROAD AND HOI TING ROAD, WEST KOWLOON RECLAMATION AREA	R2	2,730.0	498,840	Sino Group
27/9/2005	FUNG SHING STREET, NGAU CHI WAN, KOWLOON	R2	4,230.0	778,183	Sun Hung Kai
18.7.2006	CHEUNG SHA, LANTAU ISLAND, NEW TERRITORIES	R4	30.5	9,645	Small Developer (tak Hing)
12.9.2006	CASTLE PEAK ROAD – TSING LUNG TAU, NEW TERRITORIES	R3	53.0	8,934	Sun Hung Kai
28.11.2006	1 BROADCAST DRIVE, KOWLOON TONG, KOWLOON	R2	1,940.0	196,594	Sino Group
28.11.2006	AREA 77, MA ON SHAN, SHA TIN, NEW TERRITORIES	R2	3,240.0	884,801	Cheung Kong
19.12.2006	NO. 12 MOUNT KELLETT ROAD, THE PEAK, HONG KONG	R3	1,800.0	42,658	Sun Hung Kai
13.3.2007	PAK SHEK KOK RECLAMATION PHASE I, SITE A, TAI PO, NEW TERRITORIES	R2	2,110.0	345,400	Sino Group and Nan Fung
13.3.2007	PAK SHEK KOK RECLAMATION PHASE I, SITE C, TAI PO, NEW TERRITORIES	R2	3,500.0	749,700	Nan Fung(50%) Ka Wah (25%) Sino Group (25%)
13.3.2007	JUNCTION OF PLOVER COVE ROAD AND PO WU LANE, TAI PO, NEW TERRITORIES	CR	570.0	177,606	Chinachem
27.3.2007	SHUI HANG, CHEUNG CHAU	R4	96.5	44,692	Small Developer (Cheuk Nang Holdings)
8.5.2007	JUNCTION OF HOI WANG ROAD, YAN CHEUNG ROAD AND YAU CHEUNG ROAD, WEST KOWLOON RECLAMATION AREA, KOWLOON	R1	4,000.0	650,684	Sino Group
29.5.2007	TSING LUNG ROAD, AREA 58, SIU LAM, TUEN MUN, NEW TERRITORIES	R3	960.0	208,500	Small Developer (USI)

29.5.2007	TSING FAT LANE, AREA 58, SIU LAM, TUEN MUN, NEW TERRITORIES	R3	780.0	238,400	Chinachem
12.6.2007	HOI FAI ROAD, KOWLOON	R1	5,560.0	916,500	Sun Hung Kai
31.7.2007	3 CHUN YAN STREET, WONG TAI SIN, KOWLOON	R1	3,980.0	920,516	Kerry Properties

(Source: Yeung 2008)

Appendix 4: Return on Assets of developers, 1995-2006

	Sun Hung Kai	Cheung Kong	Henderson Land	Sino Land	New World Development	Wheelock	Kerry Properties	Hang Lung
2006	8.2497%	7.2358%	7.3875%	8.6187%	2.9930%	4.6977%	8.9474%	9.2002%
2005	8.6006%	6.4724%	10.7595%	8.9545%	0.9283%	8.6152%	6.7808%	7.2932%
2004	9.1265%	5.2034%	10.3693%	10.1257%	2.4139%	9.0223%	5.5198%	12.8316%
2003	4.0290%	4.4266%	6.5831%	3.0892%	-0.8783%	6.3114%	1.2801%	9.7743%
2002	3.9670%	4.4162%	2.3879%	0.0861%	-4.0761%	-5.0550%	1.8810%	2.1446%
2001	4.8962%	3.6828%	2.3746%	0.6337%	1.0059%	0.4411%	1.1057%	3.0589%
2000	4.6551%	10.2969%	4.7220%	1.2906%	0.0356%	0.9685%	1.8548%	3.4134%
1999	6.3353%	34.0972%	6.0815%	3.6291%	0.1679%	1.5085%	3.0970%	3.2127%
1998	5.8050%	6.2599%	5.8403%	4.1334%	1.1516%	1.1315%	3.1448%	5.3538%
1997	4.3154%	16.3913%	5.2278%	2.4053%	2.0466%	1.8574%	3.7824%	7.4732%
1996	7.5186%	14.3958%	9.3622%	3.8528%	4.8888%	3.0991%	3.1701%	5.8726%
1995	7.9739%	17.6165%	10.6220%	3.1832%	4.3329%	5.2713%	1.5410%	4.3755%

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