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The Impact of the Hong Kong Competition Ordinance on the construction industry
Market Concentration & Entry Barriers Analysis

By

SHEN Lu

Submitted in partial fulfillment of the requirements
For the degree of Bachelor of Science (Honors)
In Surveying

Department of Civil and Architectural Engineering
City University of Hong Kong

March 2014
Abstract

Since the enactment of Competition Ordinance in Hong Kong in 2012, the government has planned to publish the non-statutory guidelines covering interpretation of the Competition Ordinance, block exemptions, investigation procedures and complaints procedures in 2014. It could be expected that the construction industry in Hong Kong is likely to be affected by its enforcement in the near future. It is thus necessary to analyze the particular impact of Competition Ordinance have on the construction industry and prevention measures that can be taken to avoid possible infringements.

The project focuses on the possibilities of the current practice and market structure in the construction industry infringing either the first conduct rule or the second conduct rule. To have a deeper understanding of the conditions of the construction industry in Hong Kong, interviews have been conducted with the practitioners in the industry to identify the vulnerabilities of the common practice in the industry to the rules of Competition Ordinance. Besides, market concentration tests based on the data of Ten Mega Projects were carried out to indicate the current competition level and the market structure so as to identify the possible anti-competition practice as well as to suggest the feasible methods to encourage competition.

Response from the first interview indicates the practice of fixing trading conditions and setting technical or design standards are the most vulnerable practices under the first conduct rule. Tying and bundling behavior, especially in the sector of suppliers and specialists, is likely to fall foul of the category of the second conduct rule. To better estimate the vulnerabilities of the industry to Competition Ordinance, the market concentration level is analyzed and can be identified as two-tier (moderate concentrated for large contractors and fully competitive for small contractors) through the analysis of the in Ten Mega Projects market. In analyzing the market concentration, it was found that entry barriers are key factors. The procurement and listing methods adopted by the government and MTRC were analyzed to assess whether their operations instill any anti-competitive effects. A second interview was conducted with MTRC to further understand the procurement approach in enhancing competition.
Acknowledgements

I would like to express my sincere gratitude to all those who have offered me invaluable help and crucial advice during the development of this thesis.

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Second, I gratefully acknowledge the assistance and support from the industry practitioner I interviewed, who have spared their precious time in facilitating me to get more practical understanding of this industry and given me illuminating advice.

Last but not least, I feel much indebted to my family and friends who have helped and encouraged me in the course of writing this report, giving me spiritual support to finally accomplish this FYP study.
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CHAPTER 1 INTRODUCTION

1.1 Background
Hong Kong has been long renowned for its high economic efficiency and fairly competitive environment all over the world. However, in the newly released Anniversary World Competitiveness Rankings done by the International Institute for Management Development, Hong Kong has lost its status as the world’s most competitive economy and only ranked the third. The worsened external factors as well as the lack of necessary competition promotion might have jointly contributed to the loss of competitiveness. After Singapore and China established the relevant legislation, Hong Kong finally enacted its first ever cross-sector Competition Ordinance in 2012, which is expected to be enforced in 2015. A variety of studies have shown the significant implications of competition law in legal, economic as well as social perspectives.

Among all the sectors in Hong Kong, the construction industry is definitely a major one. The gross value of only one quarter performed by main contractors in 2012 has already amounted to HKD$39.2 billion. (HKTDC Research, 2012) Furthermore, the roll out of Ten Mega Projects has further boosted the construction industry. These projects will bring numerous construction contracts with the annual overall contract value over 100 billions each year and create more than 250 thousand job opportunities. (Policy Address, 2012) The next few years will be the peak work period for the construction industry. It could be anticipated that the construction industry in Hong Kong will be greatly affected by the passing of this law because the construction industry has long been the common target in other competition jurisdictions. Though most of the practitioners and the firms haven’t paid the sufficient attention to the legislation, there have been several organizations publishing the possible minefields of the construction industry and alerting the alarm. Hong Kong Construction Industry Council (CIC) has held events aiming to raise the awareness of the whole industry on the importance of Competition Law and indicated the anti-competitive conducts in the construction industry including bid-rigging, price fixing, market sharing and so on. (Construction Industry Council, 2013) In addition, a law firm MinterEllison published a report on the impact of competition law in construction industry, listing construction cases infringing competition law from Japan, Australia, UK as well as Singapore. MinterEllison stated that the main reason is that many conducts which infringes the Competition Law are long established behaviors which have been widely accepted as the norm, despite its illegality. It also suggested the construction firms must take actions to break away and discontinue any established arrangements which would fall foul of the competition ordinance before it comes into full effect. Not only may certain widely accepted behaviors fall into the category of the Competition Ordinance, but also the market power of certain big contractors deserve deeper analysis to avoid the possible infringement of the second conduct rule. In April 2013, the Development Bureau decided to amend the approval criteria of the government listed contractors because for the recent five years, there is not a single new contractor having been admitted into Group C list and only 10% of the Group C contractors having occupied over 50% of the projects in terms of the contract value. In order to analyze the vulnerability to the second conduct rule, the project focuses on the market shares analysis of the Ten Mega Infrastructure Projects as the snapshots as well as the analysis to the procurement and prequalification strategies in the public sectors, especially for the projects with huge contract values. The thesis also assesses the entry barriers of the construction industry.
to indicate the competition level and suggest the ways to reduce the entry barriers and promote the competition in the construction industry.

The essential awareness of the impact brought by the competition law is crucial to the practitioners in the industry in that they have to be more cautious about their conducts not to fall in the category of Competition Ordinance. The full preparation for the new legislation will be likely to save huge expenses from being sanctioned for the infringements.

1.2 Statement of Objectives
This project intends to find out the minefields which are vulnerable to the Competition Ordinance and the relevant impact. Market concentration tests have also been conducted to get the general idea of construction industry’s market structure and the big firms’ market power. The thesis also researched on the entry barriers and gave suggestions on enhancing competition in the construction industry in Hong Kong. The objectives of this study can be summarized as follows:

i. To understand the implications of Competition Ordinance on legal, economic and social perspectives of the construction industry or business sector.
ii. To identify how the industry practitioners view the impact of the Competition Ordinance on the construction industry, what attitudes they have towards this law and what practices they think may violate or infringe the Competition Ordinance.
iii. To decide the market structure of the construction industry and the market powers of large-scaled contractors to indicate the possibilities of these contractors infringing the second conduct rule
iv. To study the procurement methods and government listing criteria to find out whether those requirements constitute high entry barriers causing anti-competition results.
v. To suggest ways to reduce entry barriers and enhance competition

1.3 Report Outlines
The project consists of seven chapters:
Chapter 1 introduces the backgrounds of the Competition Ordinance as well as the significance of studying the impacts on the construction industry.
Chapter 2 gives the literature review. In this chapter, the significant implications of Competition Ordinance on legal, economic and social perspectives are presented.
Chapter 3 and Chapter 4 describe the research framework and methodologies for the study.
Chapter 5 demonstrates the consolidation of responses from the interviews.
Chapter 6 provides an in-depth study on the market structure and market powers of the large contractors to indicate the possibilities of the practitioners infringing the Competition Ordinance as well as studies the listing and procurement system attempting to analyze whether they bring about any anti-competition results.
Chapter 7 gives the conclusion of the study.
CHAPTER 2 LITERATURE REVIEW

2.1 Development of Competition Law in Legal Provision

Competition Law, in legal provision, is of great significance as an executive arm. The legal framework can provide flexibility for market agents and stable institutions to enforce contracts and property rights and enhance the predictability, transparency, and accountability of state actions. (Pistor and Wellons, 1999)

In ruling what is right or wrong, law makes clear clauses and guidelines for the public to follow to avoid potential violation. “Without a law any blatant act is legal, it is necessary to outlaw any anti-competitive conduct so as to improve market discipline in a true market economy.” (Chen and Lin, 2007) The behaviors which haven’t been outlawed would be considered as legitimate, though it is a wrong conduct. “It would leave a lacuna in law that could be exploited by companies seeking monopoly rent” (Chen and Lin, 2007).

Also, development of Competition Law is important because it provides the legal institutions to give decisions. Courts and judicial procedures are crucial when there is dispute on contracts or other legal issues. For Competition Law, the Commission as well as the tribunal served for the decisions and dispute, which should be resolved by a unbiased and reasonable third person without any own interests involved.

In addition, law is empowered to own investigation right and executive power to stop and punish illegal conduct, keeping the market in order. Chen and Lin (2007) stated that “Without a competition law and hence the process of due investigation, it is impossible to gauge the prevalence of anti-competitive conduct in Hong Kong. On the one hand, one cannot find enough evidence of bad conduct unless a competition law is set up which gives the enforcement agency the power to investigate and collect evidence of suspicious practices.” (Chen and Lin, 2007) Monopoly and abuse of market power or the formation of cartels can bring amounts of profits to the specific undertaking, and it is barely possible that the undertakings can stop their behaviours themselves by finding they are making consumers suffer. It is also unrealistic to expect the other competitors to disclose the unfair plays all the time. As noted in Response to Public Discussion Document “Promoting Competition – Maintaining our Economic Drive”, “Absent a law, the internal mechanism and incentives are lacking for the markets to expose evidence of unfair plays on its own.” (Chen and Lin, 2007)

Besides, law is the only legitimate means of punishing other people. Without due punishment, the illegal conduct won’t stop because the profits or benefits which could be extracted from the illegal behaviours outweighs the potential costs or the outcomes.
2.2 Development of competition law in an economic provision
From the most fundamental view of economics, it is known to all that a perfect competitive market is the most efficient and ideal market from an economic perspective.

2.21 Market failure justifies competition law
By a perfect competitive market, it means a completely free market which is only controlled by pure economic mechanism. From this view, any government intervention including competition law will be unacceptable. From the classical perspective, the market is capable of automatically adjusting itself by its ‘invisible hand’. The theory is that firms will compete against each other for more profits and certainly market power and one or two firms could definitely get dominance in the market but that’s due to superior technology or continuous innovation. And when the firm in a dominant position starts to raise the price, it creates profitable opportunities to compete and attracts more entries, which will eventually stop the monopoly.

However, from Neoclassical theory, although the market, as the “invisible hand”, is considered as the most effective economic organization, it is contingent when the competition is limited. When there is limited competition in the market, in order to maximize profits, the dominant firm will always keep the market under-stocked by never fully supplying the goods, which will definitely increase the price and cause deadweight loss. Even though there is no monopoly, a couple of firms can enter into some agreement to collectively reduce output together to increase price dramatically. Classic theory cannot help especially where the entry barriers are so high to stop other entrants entering the market. Some other cases includes using aggressive price that is usually below the cost to exclude new entrants or require the big supplier to supply exclusively. In these cases, the market itself cannot regulate these aggressive behaviors and thus cause inevitable deadweight loss and market inefficiency. The market failure calls for the government intervention to eradicate inefficiencies. This need for government intervention helps competition law to develop.

As noted in the Response to Public Discussion Document “Promoting Competition – Maintaining our Economic Drive”, Competition law, in setting up the rules of the game, is not intervention. Rather it is to safeguard the competitive process through which to reduce social loss and maximize welfare. (Chen and Lin, 2007)

2.22 Can Competition Law lead to economic growth?
The concrete evidence proving the strong link between competition law and the macroeconomic benefits is lacking. The reason may be that there are many other public policies such as monetary, budgetary policies that also contribute to the growth of macro-economy. It is not possible to isolate the effect of individual competition law from other public policies.

Though there is no such research proof, certain political representatives did have positive estimates about the effects of competition law. For example, the former Minister for Economy in Belgium, F. Moerman, mentioned annual benefits around $250 million, representing 6,000 potential jobs for Belgium.

There is also a study in Competition Policy and Productive Growth: An Empirical Assessment, September 2009 showing casual link between strong competition enforcement and long-term economic growth. This study covers the total factor productivity in 22 industries of 12 OECD countries between 1995 and 2005. This study,
as a matter of fact, could prove that the competition policy helps to reduce the tremendous cost to the society due to the exercise of market power. It is noted that “The effect is strengthened by good legal systems, suggesting complementarities between competition policy and the efficiency of law enforcement institutions.” (Ciari, Duso, Spagnolo, Vitale, 2009)

2.23 How would Competition Law benefit the economy?

Competition aims to ensure the sufficient competition existing in the market, which could improve productivity and all sorts of efficiencies to a great extent.

2.23.1 Productivity

Lots of studies pointed out that the increase in competition could lead to increase in productivity. The impact of competition on productivity growth is confirmed by a number of studies, which found that high degrees of market concentration and market share have an adverse effect on the level of total factor productivity.

A study for the United Kingdom (Nickell, 1996) also found that competition, measured by an increase in the number of competitors or lower levels of rents, is associated with higher total factor productivity growth.

The link between competition and productivity growth is perhaps most clearly demonstrated by the experiences with service sector deregulation in many OECD countries (Winston, 1993; Høj, Kato and Pilat, 1996). For instance, the deregulation of the US airline market since 1978 and that of the United Kingdom over the 1980s led to a large increase in productivity. The deregulation of road freight transport in many OECD countries {OECD, 1990} and of the telecommunications industry in the United States, the United Kingdom and Japan (Harris, et al., 1995) led to similar experiences. (Winston, 1993; Høj; Kato and Pilat, 1996) Two other directly relevant papers are Olley and Pakes (1996), which finds that deregulation of the US telecommunications industry led to increases in productivity through restructuring that shifted capital from less to more productive firms and induced the exit of lower productivity firms, and Gagnepain and Uribe (2003) which shows that the 1992 European deregulation package introduced a significant change in the behaviour of airline carriers and led to efficiency improvements. (Griffith and Harrison, 2004)

A perfect competitive market ensuring a low entry barrier will greatly contribute to the productivity growth. High entry (and exit) rates could ensure that only the best (and most productive) firms survive the competitive process, thus promoting productivity growth in an industry. (Nickell, 1996) Two recent theoretical papers that focus on reallocation effects of liberalisation are Melitz (2003) and Nicloetti and Scarpetta (2003). Melitz (2003) specifies a model with imperfect competition and heterogeneous firms in which opening to trade leads to reallocation of resources within industries towards more productive firms. Nicoletti and Scarpetta (2003) found evidence in OECD countries that the process of privatisation involves additional direct productivity gains due to the increased competitive pressures and entrepreneurial incentives stemming from changes in ownership. Evidence is also found that entry liberalization involves productivity gains in all countries, regardless of their position with respect to the technology frontier. (Nicoletti and Scarpetta, 2003) This leads to an increase in aggregate productivity. (Griffith and Harrison, 2004)

2.23.2 Efficiency
As written in the Response to Public Discussion Document “Promoting Competition – Maintaining our Economic Drive”, The objective of competition policy is to enhance economic efficiency, thereby increasing both producer and consumer surplus. (Chen and Lin, 2007) In most countries, efficiency within an industry declines beyond a certain level of concentration, suggesting that high levels of concentration are detrimental to efficiency. (Pilat, 1996)

Within public enterprises and in particular in sectors that were, until recently, generally considered to be natural monopolies (e.g. telecommunications, railways, postal services), the link between efficiency and competition is probably stronger. The lack of competition in these sectors and the high degree of public ownership have reduced incentives for cost-minimisation and efficiency improvements and have often led to a substantial degree of overstaffing (Pera, 1989). Furthermore, public enterprises tend to have lower internal efficiency than private enterprises (OECD, 1994).

Case studies of service productivity also often relate the existence of slack to a lack of competition (Baily, 1993) For instance, case studies of the banking industry suggested that this sector was characterised by considerable inefficiency, and few incentives to adopt new technology and available innovations before competitive pressures increased. In airlines, the evidence suggests that deregulated markets (primarily the United States, the United Kingdom, Canada, Australia and New Zealand) have much lower costs and are far more efficient than regulated markets (mainly those of many countries in continental Europe). (Winston, 1993; Hoj, Kato and Pilat, 1996)

All those cases are suggesting that a lack of competition in one industry could have more tolerance to inefficiencies and reduced incentives for improvements, which contributes to its lagging behind.

i. Allocative efficiency
Chen and Lin (2007) mentioned in the Response to Public Discussion Document “Promoting Competition – Maintaining our Economic Drive”, firms are forced to act in the best interests of consumers and the society’s resources are allocated in the most efficient manner when faced with competition. (Chen and Lin, 2007)

Allocative efficiency means that producers only produce the more desirable products which are in high demand with limited resources. When a market fails to be allocatively efficient, it causes market failure. If the cost of producing one marginal product is different from the value the consumer is willing to pay, then there is allocative inefficiency. (Akman, 2012)

One recent study by Pavcnik (2002) looks at trade liberalization in Chile, and finds that inputs reallocation from low to high contributes around 2% to growth in manufacturing (traded sectors). More product market competition can lead to increased allocative efficiency as lower productivity firms exit and market share moves from lower productivity to higher productivity firms. This means that inputs (labour, capital) are allocated more efficiently. (Griffith, 2004)

ii. Productive efficiency
“Productive Efficiency” occurs when a given set of product is being produced at the lowest possible cost (given current technology, input and so on). (Akman, 2012) Where
the monopolist does not use the most efficient technology available, this leads to productive inefficiency. (Motta, Massimo, Vasconcelos, Helder, 2004)

Higher product market competition on productive efficiency has been the incentive for managers and workers to reduce slack, trim fat and structure the workplace more efficiently. This strand of the literature motivates Nickell (1996)’s influential empirical paper. The agency cost suggests that inefficiencies arise because managers (or workers) slack, there is a conflict of interest between owners and managers, and the owners cannot perfectly monitor the managers’ effort.

Ros (1999) also examines the relative importance of deregulation/liberalisation and privatisation in promoting operating efficiency, quality and pricing of telecom services. The empirical studies conclude that deregulation and liberalisation are associated with significant growth in operating efficiency, price and quality.

Boylan and Nicoletti (2000) try to infer the effects of deregulation on performance by using variation of market outcomes and regulatory regime over time and countries for the OECD. They focus on three measures of performance: labour productivity, prices and quality. The degree of market competition and the time to liberalisation emerge as the two main explanations for the cross-country and time variability in productivity and prices.

### iii. Dynamic Efficiency

Gains through allocative and productive efficiency represent one-off changes to the level of productivity and output and accrue relatively quickly. Improvements in dynamic efficiency, through innovation and the introduction of new good and new processes, potentially have a much larger impact but are also likely to take much longer to accrue. Nobel Laureate Robert Solow formalized the empirical findings and conclude that technological change is the major factor behind the majority of economic growth (in one study by Solow estimated at 87.5 per cent).

In many markets, price is no longer the primary means of competition because innovation could also reduce production costs as well as improve production efficiency. Technological change could increase the marginal productivity of capital, spurring savings and investments, which raise the volume of capital. (Lachman, 1999) More competition may increase the opportunities for technology transfer if it results in new goods or services entering the market or the entry of firms with lower cost technologies. (Griffith, 2004)

In addition, it is not clear whether increasing product market competition can directly lead to increases in firms’ incentives to innovation. This is because innovation can be encouraged only if the potential rents post innovation can be increased and scholars hold various opinions on the relationship between competition and post-innovation rents.

#### a. Negative Correlation

The early empirical literature, inspired by Schumpeter[1943], estimated linear cross-sectional relationships and found a negative relationship between competition and innovation. (Pilat, 1996) The increased product market competition led to reduced innovative activity, as more competition reduced the monopoly rents that reward successful innovators. Results in these models were driven by the assumption that
innovation was made by outsiders (pre-innovation rents were zero) so the payoff to innovation is just equal to the post innovation rent. Increasing product market competition reduces the post innovation rents so reduces incentives to innovate. (Griffith, 2004) The underlying reason may be that it is costless and easy to replicate and use the innovated idea many times and thus the payoff for innovation would be diffused quickly, especially in strong competition.

The leading IO models of product differentiation and monopolistic competition, namely Salop [1977]) and Dixit and Stiglitz [1977], deliver the prediction that more intense product market competition reduces post-entry rents, and therefore reduces the equilibrium number of entrants. This prediction is shared by most existing models of endogenous growth (e.g., Romer [1990], Aghion and Howitt [1992], and Grossman and Helpman [1991]), where an increase in product market competition, or in the rate of imitation, has a negative effect on new innovation. (Pilat, 2004)

b. Positive Correlation
As noted by Response to Public Discussion Document “Promoting Competition – Maintaining our Economic Drive”, to the extent that competition law deters incumbent firms from foreclosing entry by potential rivals, it will strengthen the incentives of the incumbent and rivals to innovate. (Chen and Lin, 2007)

There are certain empirical proving the positive correlation between innovation and competition. Nickell [1996] found a positive impact of competition on firm level TFP growth and Blundell, Griffith, and Van Reenen [1999] both find a positive linear effect of competition on innovation. (Pilat, 1996) They found that there were more total innovations in more competitive industries, though it is the dominant firms that innovate most. (Griffith, 2004)

In the McKinsey work, the degree to which firms implement modern technology was directly related to their exposure to competition. A firm in a sheltered market has few incentives to choose an efficient technology and reduce resource use. For Germany, Japan and the United States, Baily and Gersbach (1995) argued that differences in the use of modern technology were strongly correlated with the extent to which entire industries were exposed to competition. (Pilat, 1996)

More recent models from Aghion et al (2002) extend the Schumpeterian model by considering the situation where existing competitors do innovations. Since in this situation, incumbent firms can also innovate, the rewards for new innovations are no longer just the post-innovation rent alone but the difference between the post-innovation rent and the pre-innovation rent. As a result, stronger competition will not only reduce the post-innovation rents but also the pre-innovation rents. And competition could reduce the pre-innovation rents much more than reducing the post-innovation rents. In other words, competition may increase the incremental profits from innovating, and thereby encourage R&D investments aimed at “escaping competition”. (Griffith, 2004) Scherer also concluded that the basic incentives for R&D is not patent protection but competition, saying that ‘If you don’t keep running on the treadmill, you’re going to be thrown off.’ (Federal Trade Commission, 1996)

Nicoletti and Scarpetta (2003) found that the lower the entry barriers and state control, the faster the process of catching up with best-practice technologies in manufacturing industries. Easing the entry conditions and reducing state control enables the countries
that are laggards in both the technology adoption and reform to reap the largest productivity gains from state retrenchment and market liberalization that are potentially competitive. So for sheltered and less competitive market, the technical innovations will develop very slowly, even hinder the adoption of existing technology.

c. Inverted U Correlation

Aghion et al (2005) conclude that the relationship between the Product Market Competition (PMC) and innovation is an inverted-U shape, similar to the paper from Scherer[1967] done by researching on the Fortune 500. The R&D/sales ratio peaked when the four-firm concentration ratio reached 50-55 per cent. In this mode, increase in competition would lead to an increase in the incremental profit for innovation (the post-innovation rent minus the pre-innovation rent) and thus increase the incentives for innovation, so-called “escape-competition effect”. This accounts for the increasing part of the inverted-U shape relationship. But increasing competition would also decrease the incentives for innovation for the laggards, labeled as “Schumpeterian Effect”. Because in unleveled sectors, the laggard’s reward to catching up with the technological leader would be reduced as competition becomes more intense. That is to say, competition discourages laggard firms from innovating but encourages neck-and-neck firms to innovate. To what extent the competition level is the best for innovation and R&D is still inconclusive, which also highly depends on the product life cycle, and the type of the product. Marcus Glader commented that “It is probably fair to say that innovation is generally best promoted neither by unthreatened monopolistic enterprises nor by a totally atomistic market structure.” (Glader, 2006)

Innovation is of great importance in economic development but in what way or direction competition could affect innovation is still unclear because the result varies across different industries and different types of firms due to a number of factors including the current state of technology and so on. But it is beyond doubt that proper R&D incentives require at least certain competition, especially for neck-to-neck competitors.

2.24 Summary

Most of the benefits for productivity and efficiencies have been supported by a number of researches, empirical studies and thesis while the effect of dynamic efficiencies is still controversial. However, it is undoubted that reasonable levels of competition must be present to give incentives for innovation.
2.3 Development of Competition Law in Social Provision

2.31 Why we need Competition Law?

As Vedder noted, that “Competition Law appears to be one of those fields of law the purpose of which is not self-explanatory.” (Vedder, 2006) Cseres (2007) further explained the objectives of his opinions and said “Competition law is primarily concerned with economic efficiency and with the overall welfare of society, without distinguishing between different groups of society.” Welfare economics concentrates on allocating limited resources optimally to maximize the well-being for the whole society. (Akman, 2012)

From these opinions, Competition law is not the end but the means to achieve social goals. However, there still exists the debate on the exact objectives of the competition policy and whether social welfare should be a value judgement.

What’s worth mentioning is that in most cases, consumer welfare and total welfare move together. The possibility of getting contradicting results using the two standards is very small. (Akman, 2012) The way to choose between two standards when reaching different outcomes is further elaborated as follows. Most jurisdictions explained the overall welfare of society as consumer welfare standard opposed to the concept of “total welfare”. Referring to the development of Competition Law in different jurisdiction around the world, their developments in the social provision mainly focus on improving consumer welfare and preventing consumer harm from the producers’ anti-competitive behaviours.

Neelie Kroes, one member of the European Commission, delivered the speech on the European Consumer and Competition Day that “Our aim is simple: to protect competition in the market as a means of enhancing consumer welfare and ensuring an efficient allocation of resources. (Kroes, 2005) “In addition, Philip LOWE, Director General for Competition, stated that “Competition is not an end in itself, but an instrument designed to achieve a certain public interest objective, consumer welfare.” (Lowe, 2006) The Antitrust law in the US expressed the same intention saying “The FTC acts to ensure that markets operate efficiently to benefit consumers. The FTC's twin missions of competition and consumer protection serve a common aim: to enhance consumer welfare.” (Federal Trade Commission, 2003) The authorities suggesting the same purpose also include the Office of Fair Trading in the United Kingdom, declaring “The OFT's mission is to make markets work well for consumers. Our job is to make sure that consumers have as much choice as possible across all the different sectors of the marketplace. When consumers have choice they have genuine and enduring power.”

However, there are also dissenting voices from economists. The criticism stated that consumer welfare is not overall welfare of society that the competition rules intend to achieve and pure economic efficiencies are more objective. (Cseres, 2007) Some economists such as Joseph Farrell and Michael L. Katz believed that the competition rules using consumer welfare standard are favouring one group of people over another, and thus impeding the maximization of efficiencies. And Competition rule should aim to improve the total surplus without regard to distribution of welfare. (Farrell and Katz, 2006) Because in welfare theory, equal gains yield equal utility increases, which will have equal effects on social welfare. But under consumer welfare standard, the gains transferred from consumers to producers cannot yield increase in social welfare even if it can increase producers’ utility and make some people better off. Consumer welfare
by definition does not take into account the gains made by the firms. Consumer welfare treated people unequally when in the roles of workers or capital owners. (Farrell and Katz, 2006) Using consumer standard is concentrating how the income is distributed fairly and equally, which could be done applying other policies such as taxation and consumer protection, while competition law should be the efficiencies-oriented policy not income distribution policy. As Okun argued, ‘We can’t have our cake of market efficiency and share it equally’. (Okun, 1975) And it is likely that a short-run consumer welfare may reduce the producers’ incentives to invest and innovate, which will eventually decrease consumers’ benefits in return. (Bishop and Walker, 2002)

On the contrary, the ‘total welfare standard’ is more suited to measure whether there is an increase in the well being for the whole society, since a loss of consumer welfare due to high prices or low quality can be compensated by the larger increase of producer welfare, which also improves the total welfare for the society. (Akman, 2012) The economists supporting total welfare standards claimed that it is not certain whether one dollar in a poor person’s hand is worth more than that in a rich person’s hand, and thus it might be better to assume that all parties are equally deserving. Under this standard, the competition law will mainly focus on the maximization of efficiencies and does not require the benefits passed on to consumers. (Akman, 2012) Another rationale stated that if one project A can yield better result can another one B, then the wealth from this project A can be transferred to other people to meet the Pareto Efficiency, which means making individuals better off without making at least one worse off. And Competition Law should always maximize the largest total welfare and counts on the process of balancing out gains and losses.

But till now, almost no competition authorities could apply this theory consistently and major authorities all rejected this standard. Any competition law allowing firms to adopt practices that generate efficiency benefits by reducing consumers’ surplus threatens to undermine consumer confidence. Confidence of consumers in the market is relevant to have consumers’ political support for the political bargain. (Cseres, 2007) K J Cseres stated that consumers are in a weaker position and that is why the pro-consumer policy makes sense to give a “rebalancing” effect and helps the political bargain.

Overall, the fundamental objectives for competition law in most legislation is to increase social welfare and for most jurisdictions, it means consumer welfare. Even from the history, the first competition law in Roman Legislation which is prohibiting the stop of supply ships for grains was aimed to protect the consumers from suffering the harm. There still exist great debates on the standard adopted. However, in most cases, the increase in consumer welfare also means the increase in social welfare. And the increase in consumer welfare should be one of the biggest motives to establish Competition Law.

2.32 How to improve social welfare using Competition Law?

Competition Policy prevents monopoly or other anti-competitive behaviours which cause deadweight loss to the market. In a monopoly, the producer will tend to set a higher price with lower production. Though the producer surplus increases, the consumer as well as total surplus suffer a lot.

In addition, some consumers who are willing to pay an amount higher than the marginal
cost still cannot purchase the goods or services, which lower the consumers utility and welfare. Competition Law prevents consumers from suffering from the harm or injury caused by monopoly or undersupply as well as prevents loss of social welfare. Furthermore, Competition law guarantees that consumers get a fair share of the economic benefits resulting by the technical progress or effective market operation. Such economic benefits can be realised through lowering the costs of production, expanding output, improving the quality of the product or creating a new product and spurring innovation. (Cseres, 2007)

As noted by the Federal Trade Commission, “the Commission's competition mission promotes free and open competitive markets, bringing consumers lower prices, innovation, and choice among products and services. The Commission's consumer protection mission fosters the exchange of accurate, non-deceptive information, allowing consumers to make informed choices in their purchases. Thus, these missions complement each other - accurate information in the marketplace facilitates fair and robust competition - and maximize benefits for consumers.” (Federal Trade Commission, 2003)

In other words, the consumer welfare standard sets the criteria of the assessment and measurement of the anti-and pro-competitive effects of business practices. There could be three approaches to set up Competition Law:

First, competition policy may ignore consumer interests and focus solely on total welfare and economic efficiency. Second, it may recognise the immediate and short-term interests of consumers as the primary aim of competition policy. Third, competition policy might recognise consumer welfare as an essential long-term goal where the immediate interests of consumers are subordinated to the economic welfare of the society as a whole.

The first approach seems to have little attraction for policy-makers as it ignores the wealth transfer and thereby neglects any kind of protection for consumer interests. Still, certain scholars believe that competition should focus on efficiencies rather than distribution of income. ‘Antitrust thus has a built in preference for material prosperity, but it has nothing to say about the way prosperity is distributed or used.’ (Bork, 1978) The Chicago school also considered wealth should go where it is the most appreciated. In spite of its economic theory, it is unlikely that competition agencies or courts would adopt the kind of competition law that allows the increase in total welfare but meanwhile causing harm to consumers.

The second approach would only focus on immediate short-term consumer interests and sacrifice the overall social interests. This approach disregards producers’ efficiency gains and benefits that drive productivity growth and innovation and that could actually benefit consumers in the long run.

The third approach would prefer long-term consumer interests provided that the following three requirements could be satisfied. First, the activity must increase total welfare by realising substantial production and innovation efficiencies. Second, the activity has to be necessary, reasonable and proportionate so as to harm consumers as little as possible. Third, it must not lastinglly impair competition and be able to re-establish competition on the market. This condition requires that a fair share of
efficiency gains is passed on to consumers. (Okun, 1975)

2.33 Summary
All in all, Competition Policy in most jurisdictions is serving for improving consumer welfare as well as overall social welfare in its social provision and in most cases, the existence of Competition Policy can increase the total welfare and consumer welfare at the same time by avoiding deadweight loss and encouraging business efficiencies. But where there is conflict, the consumer welfare standard in turn is usually the benchmark for Competition Law.

CHAPTER 3 BACKGROUND STUDY

3.1 Introduction
As a cross-sector legislation, Competition Law has significant implications in all sectors. In order to avoid the possible infringements of this law in the construction industry in Hong Kong, the vulnerable minefields specific to the construction industry need to be studied. Thus, the construction cases infringing Competition Ordinance in foreign countries are worth studying.

3.2 Foreign Construction Cases

Australia
In this case, the four large contractors bidding for the projects took part in the collusive practices by which they fixed prices and also fixed the ‘loser’s fees’ to award for the other three contractors’ cooperation.

**England**

*OFT v. Riggs Roofing and Cladding and Others 2005*

In this case, over 100 firms were fined for engaging in bid-rigging activities in over 200 tenders, largely involving cover pricing (Chin and Noble, 2013).

*OFT Statement Objections against 112 Construction Firms 2008*

In April 2008, the OFT has issued the Statement Objections against 112 construction firms which are suspected to take part in bid-rigging activities, mainly for cover pricing.

**European Commission**

*European Commission v. ArcelorMittal and Others 2011*

In this case, 17 producers of prestressed steel agreed to fix prices, share markets and exchange sensitive information and were fined a total of EUR 269 million by the commission.

**Japan**

*JFTC v. Ishikawajima-Harima Heavy Industries, Ebara Crop and Others 2006*

In this case, six machinery makers took part in the bid-rigging in bidding for the ventilation facilities in road tunnel projects and were fined by the Japan Fair Trade Commission.

**Singapore**

*CCS v. Aldale Electrical Services and Alpha & Omega Engineering and Others 2010*

In this case, 14 electrical and engineering companies entered into collusive tendering agreements for 10 projects and were fined $190,000.

From these cases, it can be found that the sectors of supplier and specialists are more vulnerable to the practice of bid-rigging or price fixing. And the cartel can be of great scale not only limited to 3 or 4 firms.

Although the cases are from different countries, it is recognized that bid-rigging, price fixing or market sharing are the common illegal strategy in the construction industry in many countries. The construction markets in those countries are quite similar to the industry in Hong Kong and under the similar tendering mechanisms, it is likely for those behaviors occurring in the Hong Kong construction industry.
3.3 Hong Kong’s construction industry

Hong Kong Trade Development Council (2012) reported that Hong Kong's construction industry is characterised by a small number of large local contractors, a high level of subcontracting and most of Hong Kong’s construction companies are small in size and those with less than HK$10 million (US$1.3 million) in annual gross value of construction work account for as high as 97% of the construction industry. (Hong Kong Trade Development Council, 2012)

Hong Kong Development Bureau (2013) reported that in the past five years, there is no increase in the number of the contractors on all Groups of the Approved List although the capital works expenditure has increased threefold. Other than that, about 10% of the Group C contractors got the market share over 50% by value according to the data of the public contracts awarded. (Development Bureau, 2013)

Though the construction industry in Hong Kong has long been considered as a fully competitive market but the statistics data showed that 97% of the contractors are small in size and earn small amounts of gross value while the remaining few large contractors earning more than 50% of the value in the market. The following cases also showed the vulnerability of the market to the restricted practices.

In 2010, the cartel agreement Kam Tai v. Gammon Iron Gate Co Ltd was held to be illegal in that it cheated the main contractors to believe that the lowest bidding price is the market price, which in fact, is the prior-agreed price. The seven contractors are the only approved contractors by the Housing Authority who formed the agreements of fixing prices. The designate contractor would submit the agreed minimum prices the rest would bid a higher price. This suggests that it is very likely for the several contractors to enter collusive agreements there exist the entry barriers of approval mechanism.

More recently, on 10 March 2014, the Democratic and Labour Party and owners from nine building estates has formed a body which presses the government to smash bid-rigging syndicates. They claimed that the bid-rigging has been so widespread that they feared that honest companies are being left out and the maintenance contractors use bid-rigging to earn huge profits and high mark-up. Contracts worth more than 10 billion per year go up for grabs.

From the data provided by HKTDC and also the Development Bureau, the construction industry is not a simple fully competitive industry. Instead, it is likely to be composed of different layers of competition levels. From the cases occurred in Hong Kong about cartel conducts and the claims of bid-rigging, the construction industry in Hong Kong might also be the target of the Competition Ordinance just like in the other countries. It is thus necessary to clearly understand how vulnerable the restricted practices are to the Competition Ordinance for the construction industry.
3.4 Pilot Scheme
3.41 Introduction of the Scheme
To better understand the characteristics of the construction industry in Hong Kong, a pilot scheme was set up to test whether the industry in Hong Kong is as vulnerable as the construction industry in Singapore, UK and Europe.

The methodology used in this Pilot is interview. This is because the opinions or views from a practitioner would be more practical and closer to the real situation in the industry. Interview is the most efficient and direct method to collect the opinions from one industry practitioner. In this interview, one vice president of a main contractor firm, who was once representing Hong Kong Contractors’ Association before, was the selected respondent because he was experienced in the industry and he was relatively more familiar with Competition Ordinance.

The questions set in the interview are all about the vulnerabilities of the relevant restricted practices in the construction industry. This interview aims to obtain the applicability of Competition Ordinance to the construction industry as a pilot scheme to facilitate the direction of the following in-depth study.

3.42 Interview Responses
a. 1st Conduct Rule
Respondents were asked about the vulnerability of the construction industry in Hong Kong to the 12 conduct written in the guidelines which may obviate the first conduct rule. The level of vulnerability is presented by the rate number 1 - 5.

i. The Least Vulnerable Conducts
Among all these possible conduct, the conduct which were considered impossible or extremely unlikely to happen in the construction industry (rate 1) are as follows:

(a) Limiting or controlling production or investments;
(b) Sharing information;
(c) Exchanging price information;
(d) Exchanging non-price information;
(e) Terms of membership and certification;

For (a), it is considered very rare in the construction industry since the market is thought to be competitive and the entry barriers were considered low.

For (b) and (d), those conduct are considered unlikely to happen because those conduct can largely decrease the competitiveness of the firms. In the real market, the firms won’t do these behaviors at the expense of reducing their competitiveness.

For (c), this conduct was common and normal previously, when winning of the job was solely dependent on the tender price. The contractors always shared the tender price immediately after the bidding so that they could know which contractor would win the job instantly and those who didn’t win the job could then have a chance to adjust the prices for the following bidding. However, now there is basically no such behavior in the industry and the main reason is that the winning of the project is no longer only reliant on the tender price. Instead of it, tender rating is used to assess the capability and suitability of tenderer for the job and the decision is made on overall performance including different aspects such as method statements, technical proposal, resources
and so on. Exchanging price information is no longer effective in predicting the job winner to help adjusting the prices for the next bidding.

For (e), it is believed that there is no such membership or certifications which would cause competitive disadvantage to those who are not members in this industry.

ii. The Most Vulnerable Conducts
The conducts which are considered very vulnerable and are rated as 5 are as follows:
(a) Fixing trading conditions
(b) Setting technical or design standards

For (a), it is considered as very vulnerable because it is not clearly specified that what trading conditions may restrict competition and thus infringe the law. Negotiation for the specifications is a common practice in the industry and the Hong Kong Construction Association (HKCA) often negotiated with the government in making more practicable rules and conditions such as negotiating for the payment terms, basic capital limit and so on. Though it is personally believed that this conduct won’t have the effect of restricting competition, it may fall into the category and cause problems.

For (b), it is considered as very vulnerable because Hong Kong Construction Association does such conduct all the times. The association negotiated and set the standard with the government to make the technical rules or codes of practice more practicable. For private client, the design or technical standard will also be prescribed in detail to ensure the quality of the products, and sometimes even the methodology the contractor should use will be set and prescribed. Such prescriptions on the products themselves as well as the methods dealing with the products will definitely restrict competition in the market because the firms not familiar with or have no such experience about the design or technical standard set cannot be involved in the competition. So this is very vulnerable but it is also believed that such conduct is inevitable and beneficial to the technical advancement.

iii. The Conducts with Various Vulnerability
The conducts whose vulnerabilities vary in different sectors in the industry are as follows:
(a) Directly or indirectly fixing prices;
(b) Bid-rigging (collusive tendering);
(c) Sharing markets.

For all those conduct, the respondent thought that the vulnerability differs from sector to sector. And in conclusion, there conduct seemed to be very vulnerable for the sectors of material suppliers, specialists, or fitting out or maintenance contractors. While main contractors, such conducts are less likely to happen.

For (a), price fixing is considered extremely vulnerable to the sector of small contractors such as maintenance or fitting out contractors.
For (b), bid-rigging is also vulnerable to the sectors of small contractors including specialists and maintenance or fitting out contractors.
For (c), market sharing is most likely to happen in the sector of suppliers.

iv. Exemption and exclusion on 1st Conduct Rule
The respondent was asked about the applicability of the exclusion rules for first conduct
rule. It was believed that among all, promoting technical or economic progress is for sure able to be of the exclusion rules the industry can apply such as in the case of fixing trade conditions or setting design or technical standard. But for other exclusion rules, he believed that it is very difficult to apply those rule to exclude the liability in the construction industry. Even for the de minus rule, he believed that the threshold is too low to really take effect on protecting SMEs or protecting small projects because most of the contract sums in construction industry are higher than HKD$200M.

v. Joint Venture
For joint venture, the respondent believed that it was a common and usual practice in the industry such as small contractors joint to bid for a big project which none of them can complete by their own. Even for big contractors who are capable of doing these projects by themselves do the joint venture all the time, because through the sharing of resources and technique, their competitiveness as well as their capability can be strengthened. In the sense that joint venture decreases the number of competitors, it does restrict the competition. But on the other hand, joint venture enables small firms to be able to bid for a large project, this improves competition. In his opinion, joint venture is not likely to lead to other obviation such as bid-rigging on the ground that it is a very competitive industry and no firm would love to lose the chance to others.

vi. Other matters
The respondent was not sure about both operation of Block Exemption Order and the anti-competitive effects of vertical agreements.
b. 2nd Conduct Rule

Since the breach of Second Conduct Rule needs the fulfillment of two requirements including the substantial market power and the abuse of market power, the questions were divided into two parts.

i. Substantial Market Power

Decision on whether the firms have substantial market power can be made based on the following indicators:

(a) The market share of the undertaking;
(b) The undertaking’s power to make pricing and other decisions;
(c) Any barriers to entry to competitors into the relevant market;
(d) Any other relevant matters specified in the guidelines issued under section 35 for the purpose of this paragraph.

For (a), this issue is considered dependent on which specific sector it is. For the sectors of contractors, the vulnerability is very low with the rate being only 1 because the competition for contractors in the market is very fierce and basically it would be very impressive and difficult for a contractor to achieve the market share of 20 per cent. In general, there is no such contractor having such a substantial market share. But the dramatically large market share can always be seen in the sector of suppliers and specialists. Since the respondent owned a vertically integrated firm which acts both as contractors and suppliers. The respondent said that as a supplier, his firm has a 50% market share, which is definitely vulnerable to be considered as having big market share and considerable market power. As a result, the sectors of specialists and suppliers are very vulnerable to this indicator of having substantial market power and the rate of vulnerability for the two sectors is 5.

For (b), the respondent didn’t believe there exist any firm which can make pricing because he believed that the entry barriers are too low for the firms to uplift the prices without losing their customers. And even though the firm has great market share in the market, if it uplifts the price, the increased profits will attract more potential entrants entering the market. With such a low barrier to entry, the originally dominant firm would lose its competitiveness instantly and would be endangered. As a result, the firms in the industry generally don’t have the power to make any pricing and the rate is 1.

For (c), the respondent thought that the entry barriers are relatively low compared with those in other industries after considering sunk cost, access to input and output, economies of scale and exclusionary behaviors. The incumbent firms rarely do any exclusionary behaviors because most of these conduct must be done at the expense of sacrificing their own benefits. In such a competitive market, the sacrifices of their revenues are very dangerous for their survivals. So the vulnerability of barriers to entry is low and the rate is 2.

For (d), the relevant matter discussed is the buyers’ countervailing power, which is the buyers’ bargaining power. When there are plenty of alternatives or other similar options to choose, buyers’ countervailing power could be largely increased, which to some extent decrease the firm’s market power. And in his opinion, the buyers in the construction industry in Hong Kong are quite powerful since they usually have a number of choices. And the rate is 5.
ii. Abuse of Market Power
Then I asked him about the vulnerability to the abuse of market power. The abuse of market power can be implicated by the following two kinds of behaviors:
(a) Predatory behavior towards competitors
(b) Limiting production, markets or technical developments to the prejudice of consumers.

For (a), the respondent specifically identified two predatory behaviors and gave distinct rates for them. For tying and bundling, the interviewee believed that the industry especially for the sectors of suppliers, is indeed very common and thus vulnerable to the prohibition of this behavior. So the rate is 5. For the predatory price lower than costs, the interviewee considered it as almost impossible to happen because price lower than costs would definitely endanger the survival of the firms. So the rate is only 1.

For (b), the interviewee considered it as very unlikely to happen based on the similar reasons. The firms wouldn’t limit the production to uplift the price because of the low entry barriers. There would plenty of new firms willing to sell the same products if the dominant firm tried limiting productions. As a result, limiting production, markets or technical development is not practicable to this industry.

iii. Exclusion and Exemption
As for the applicability of exclusion for 2nd conduct rule, the interviewee gave comments on the following possible grounds for exclusion:
(a) Complying with a legal requirement;
(b) Gov’s entrusted undertakings with the operation of services of general economic interest;
(c) Mergers

For (a) and (c), the interviewee thought those two grounds not suitable or applicable to the industry. But for (b), some standards such as ISO9000 might be fit for this rule.

iv.
The respondent was then asked about the barrier to entry, he thought that there would be no impact on the operation of listing because this is a way to protect the government as a client from receiving defective buildings. And it is to ensure the quality of the final products. And for private clients, there won’t be such a system as listing. So basically this Competition Law has no impact on the listing system.

c. Innovation and Competition
The interviewee’s company has achieved outstanding achievements in innovation in the industry including products innovation and process innovation. He frankly admitted that competition has played an important role in stimulating innovations.

For example, the reason why he invested in precast product which was new product type in the industry by then was the fierce competition and the increasing costs on labour, making his firm less competitive in the market. With this trend continuing, his company would keep losing money and couldn’t survive. In this case, he decided to innovate to reduce the costs in order to increase the competitiveness and decided to set up the factory in Shenzhen to start making on precast concrete. All his innovation ideas and decisions made were based on and forced by the fierce competition in the market.
d. Innovation and Competition Law
The respondent stated that the carry out of Competition Law has negative effect on innovation and will decrease the innovation motivation. The intention of Competition Law is to increase the competition in the market and reduce and decrease entry barriers, which is the opposite of the intention of innovation, which is monopolizing the market. Competition Law reduces the after innovation profits. The lower the profits become, the lesser motivation innovators can have to innovate and the less likely the firms would invest in the innovation in technology.

e. Summary
To sum up, as for the impact of Competition Ordinance on the construction industry, the following conclusion can be summarized from the interview.

1. The respondent believed that the sector of main works is fully competitive and anti-competitive behaviors are very unlikely to occur.
2. The respondent believed that the sectors of suppliers and specialists are to some extent concentrated with several restricted conducts occurring commonly.
3. The respondent only identified fixing trading conditions and setting technical standards as the vulnerable restricted practices but he didn’t believe that he conducts would have any anti-competitive effects.
4. The respondent identified conducts including bid-rigging, price fixing or market sharing are vulnerable only to the sector of suppliers and specialists.
5. The respondent believed that the market shares of all the main contractors are low and not likely to have substantial power.
6. The respondent identified tying and bundling very common and vulnerable. The respondent believed that the entry barriers are very low and the government listing is to some extent increasing barriers but only to ensure the work qualities.
3.5 Direction for In-depth Study

Combining the interview responses with the study done from cases as well as data from the two reports, it could be found that it is commonly recognized that the sector of maintenance, suppliers or specialists are more vulnerable to be fined for the anti-competitive conducts. However, there exist some differences between the respondent’s rating and the results given by some studies from law firms or other organizations especially in the issues of bid-rigging, price fixing, abuse of market power, etc. Many studies as well as the case of ACCC v CC Construction pointed that bid-riggings exist in the whole construction industry while the respondent thought that it would only existed in the maintenance or suppliers’ sectors based on the following reasons:

1. Such collusive agreements can’t be enforced and thus no one would take the risk of giving up the winning chances and only counting on the loser’s fees.
2. The winning of tenders is not solely dependent on the tender price any more. Instead, technical standards would also be considered.
3. The main contracting sector is so competitive and the entry barrier is so low that no one would use these anti-competitive conducts because there are too many substitutes in the market.

The first reason is weak because in so many previous cases, though the collusive agreements were all unenforceable, there were still over 100 contractors entering such agreements to have higher mark-up. The second reason cannot explain for it well because till now, price is still one of the most important factors to choose the winner and it is the same to maintenance and specialists sectors but bid-rigging occurred a lot in those two sectors.

The third reason can make sense if it is true because for a fully competitive market with low entry barrier, the contractor has to set the marginal revenue equal to the marginal cost, otherwise, new entrants would enter the market and decrease the price to the marginal costs. Since there are sufficient contractors in the market, cartel conducts and bid-rigging or price fixing cannot work because people will choose the remaining sufficient substitutes. And the incumbent firms don’t have substantial market power to abuse.

However, the respondent’s answer is contrary to the report from HKTDC and the Development Bureau, which deserves further research to verify. Market competition level and the market shares obtained by the large contractors are important to estimate the possibilities of those restricted behaviors occurring. The more concentrated the market is and the higher the entry barriers are, the more easily the collusive agreements can be entered and the more easily the market power can be abused. On the contrary, if the market is fully competitive with very low entry barriers as said by the respondent, the anti-competitive conducts would be very unlikely to occur in the main contracting market.

Due to the lack of investigation power, the direct investigation of anti-competitive behaviors among contractors is impossible. But the market concentration level and the entry barrier height can be assessed to reach the likeliness of these behaviors’ occurrence in the main contracting sector in Hong Kong.
CHAPTER 4 RESEARCH FRAMEWORK

The research framework consists of six steps, and they are:
1. Introduction
2. Literature review
3. Background Study
4. In-depth Study Results
5. In-depth Study Discussion
6. Conclusion and Suggestions

Figure 4.1 Framework Flowchart
Introduction serves for the background of establishing Competition Ordinance in Hong Kong and its meaning. Literature review is done for further understanding on the significant impact the ordinance has in various perspectives.

Background study is divided into three parts. In the first part, foreign cases from England, Europe, Australia, Singapore and Japan are introduced because the construction industry is more similar to the industry in Hong Kong and thus can be referred to to assess the applicability of Competition Ordinance to the construction industry in Hong Kong. In the second part, some reports analyzing the market shares situation of the industry as well as the cartel or bid-rigging related cases are provided to further indicate the possibilities of such conducts occurring and the possible minefields. In the third parts, a practitioner was interviewed to give opinions on the vunerability of certain behaviors in the industry infringing the law, which partially verified the results from the previous two parts but some opinions are contradicting to the ideas from the previous cases and from the views of some law firms and the contradicting part leads to the direction of the in-depth study to test whether the market concentration level and the entry barriers are high or low, which contributes to the assessment of the likeliness of the occurrence of those restricted practices in the industry.

The in-depth study was done by collecting the data including the contract values and awarded firms for the Ten Mega Infrastructure Projects, among those project, only six of them have already updated the progress. These data was collected to calculate the overall contract value obtained by each firm as the indicators of market shares the contractors occupy in the market. Market share is one of the most important indicators to determine the market power. As a result, the rough market power of each firm can be analyzed.

Besides, two market concentration test methods are adopted in the study to assess the market concentration level in the market, which is further divided by company, by sector and by client type and studied individually to control the variables and assess the concentration level in different sectors or by different clients. Besides,

Figure 4.2 Data Collection Framework

Besides, two market concentration test methods are adopted in the study to assess the market concentration level in the market, which is further divided by company, by sector and by client type and studied individually to control the variables and assess the concentration level in different sectors or by different clients. Besides,
the sensitivity test has also been conducted since there are two companies forming joint venture with their subsidiaries, which could be a strategy to bid for the tender while in fact, it may be considered as one company only.

The reason of studying Ten Mega Infrastructure Projects are
1. The contract information and progress update are accessible to the public, which can help the data collection.
2. Ten Mega Infrastructure Projects have been and will continue to be the biggest and most valuable projects in the next five to ten years.
3. The projects are huge in size, and thus include almost all the sectors such as specialists, E&M and landscape, which is more comprehensive to the study.
4. Just one of the projects can generate quite a lot of the contracts to award to accommodate great numbers of the contractors, so the sample size can be bigger to reduce the bias and mistakes.

In addition, entry barrier is considered as one factor affecting the concentration level as well as the likeliness of conducting restricted practices. Though the research, it was found that listing and prequalification stage is very likely to raise the entry barrier. As a result, the procurement and prequalification mechanisms of the MTRC and the government are assessed. Since the government listing strategy has been revised in order to enhance the competition in December 2013, the old and new version have all been studied and compared. The prequalification and procurement methods adopted by MTRC are not accessible by the public, so verification stage is conducted by asking the procurement manager to complete the questionnaire set to obtain more detailed methodologies.
After the presentation of results, the discussions in market concentration level and entry barriers are provided to better understand the market structure of the construction industry in Hong Kong and estimate the vulnerabilities of certain behaviors occurring which might infringe the Competition Policy.

At last, the conclusion of this thesis from data analysis as well as discussion has been given and certain suggestions have been made to lower the entry barriers in this industry and to enhance the competition level.
CHAPTER 5 RESEARCH METHODOLOGIES

Both quantitative research method and qualitative research method are used in this thesis.

In the background study and in-depth study on entry barriers, the pilot scheme as well as the verification stage are conducted through qualitative research methods, particularly by interviewing the relevant persons to get the in-depth understanding of the issues. The qualitative research method is very useful where the data or information for quantitative research is not accessible or where the issue is focusing on the reasons of occurrence or the measures to avoid the problem which can’t be obtained by directly calculating data. In this case, the statistics of anti-competitive conducts in the construction industry in Hong Kong is not available and reasons shall be explained, thus the interview was conducted to obtain such information from the respondent. Ordinal scale is applied as the measurement method by rating 1-5 as the vulnerability of this kind of conduct to the law. For the verification stage, also due to the lack of accessible information about the procurement criteria of MTR, questionnaire was needed to get more information from the respondent.

Quantitative research method is used in the data collection and analysis for the market concentration study. Two statistic modules of calculating concentration level are adopted to approach the statistic results representing the concentration level. Ratio scale is applied to represent the market share, in this case, market power of the contractors in assessment. Compared with qualitative research method, quantitative research method is more objective and unbiased though not that flexible as qualitative research method.

In choosing the research method, objective phenomenon is assessed by quantitative research method which can reflect an unbiased result independent from manual control or operation. But for the measures adopted to reduce the possibility of infringing Competition Ordinance or enhancing competition, as well as where the reasons or detailed examples are needed to explain the occurrence of the phenomenon, qualitative research method is used because interview is more flexible and more related to subjective initiatives and rationale logic chains behind.

In conclusion, quantitative research method is done to find the true phenomenon and qualitative research method is used to explain the reasons behind and the measure that can be done to solve the problem.
CHAPTER 6 IN-DEPTH STUDY METHODS & RESULTS
MARKET CONCENTRATION

6.1 Introduction
The concern with high market concentration rests not only with the potential to exercise unilateral market power, but also with what is termed “coordinated market power” or “collective dominant position”. The Hong Kong Competition Ordinance does not specifically refer to a “collective dominant position” in the Second Conduct Rule but refers to an undertaking that has a “substantial degree of market power”. Whether an ‘undertaking’ can be taken to mean a number of firms acting in a collective dominant position remains to be tested. However, coordinated or collective conduct by a number of powerful competitors acting in concert would be caught by the First Conduct Rule if the conduct prevented, restricted or distorted competition in Hong Kong. (Consumer Council, 2013)

6.2 Definition
6.21 Market Shares – Contract Value
There are many different ways in calculating the accurate market shares including using the turnovers, asset scales, staff numbers and so on. However, since this report is to calculate the concentration level of the Ten Mega Projects as a snapshot of the construction industry in Hong Kong, the most likely and accurate way is to use the contract value (turnover in Ten Mega Projects) as the most appropriate method.

6.22 Definition of relevant Market
1. Product Market
In 1989, the USA court decided that “commodities reasonably interchangeable by consumers for the same purposes make up the relevant market.” The English Circuit, in 1989, defined the relevant market by “The relevant market depends upon economic restraints which prevent sellers from raising price above competitive levels.” The interchangeability of the commodities is the main concern to include in deciding the product market. The products shall be interchangeable and substitutable not only in characteristics but also in prices, marketing strategies, targeting customers, etc.
2. Geographical Market
To be in the same market, the firms must be not only in the same product market but also in the same geographical market. The same geographical market means in this zone, the competition conditions such as situation of demand and supply is sufficiently homogeneous. However, in the case of U.S. vs. Pabst Brewing Co., it was suggested that it is not necessary for the government to prove with precision the geographical extent of the defendant’s market (Singleton, Raybould, Firth, 1999) but a proper analysis is still needed. The purpose is to roughly separate the firms which are important factors from which are not. In 1982 Merger Guidelines, the Department of Justice stated that “The geographical market may be as small as a part of a city, or as large as the entire world. Moreover, a single firm may operate in a number of economically discrete geographical market.”

6.23 Methods to define market
There are two methods to define market. One is the traditional method called Functional or Reasonable Interchangeability, which means the two products can only be considered in one market when consumers believe that they are reasonably substitutable. However, this method is very subjective. The second method is called SSNIP (small but significant and non-transitory increase in prices), which was first introduced into the Merger Guidelines 1982 and in 1992, EU also adopted this method in determining relevant market in the case of Nestle/Perrier Case. This method is done by first assuming one subjective firm itself has constituted a relevant market and compared his profits before and after a 5% to 10% price increase, if his profits decrease due to the price increase, then itself cannot satisfy a relevant market and other possible substitutes shall be also taken into calculation to test whether it will be profitable by increasing the prices for both products together. This test will be continuously done until one market can realize more profits by increasing prices (usually by 5% to 10%). (U.S. Department of Justice, 2010)
This test is widespread used in identifying relevant market. However, it has its problems such as the sales loss could be caused by much more reasons than just raising prices and it cannot identify the relevant market when the market dominance abuses his power not by price.

However in this thesis, due to the limited capacity, the first subject definition method will be used.

6.24 Market Concentration
The concern with high market concentration rests not only with the potential to exercise unilateral market power, but also with what is termed “coordinated market power” or “collective dominant position”. The Hong Kong Competition Ordinance does not specifically refer to a “collective dominant position” in the Second Conduct Rule but refers to an undertaking that has a “substantial degree of market power”. Whether an ‘undertaking’ can be taken to mean a number of firms acting in a collective dominant position remains to be tested. However, coordinated or collective conduct by a number of powerful competitors acting in concert would be caught by the First Conduct Rule if the conduct prevented, restricted or distorted competition in Hong Kong. (Consumer Council, 2013)
6.3 Concentration Test

6.31 Concentration Ratio Test
Concentration Ratios provide estimates of the extent to which the largest firm contribute to activity in an industry. (Mahajan, 2006) CR ratio test is done by simply adding up the market shares of the largest firms in the industry. Since the market shares of those firms are not public, the total contract value each firm could attain in these projects which have already started can be a snapshot for us to test the concentration level.

6.32 Herfindahl-Hirschman Index (HHI Test)
HHI Test is an indicator of the amount of competition in the industry. It is currently the most widely adopted method to indicate the market concentration level. The HHI takes into account the relative size distribution of the firms in a market. It approaches zero when a market is occupied by a large number of firms of relatively equal size and reaches its maximum of 10,000 points when a market is controlled by a single firm. The HHI increases both as the number of firms in the market decreases and as the disparity in size between those firms increases. (U.S. Department of Justice, 2010)

6.33 Market Concentration Calculation

**CR4 Ratio Test**

I. By company profile
CR4=12%+12%+11%+11%=46%
Contractor E, Contractor F, Contractor G, Contractor B

II. By sector of works
a. Main Works
CR4=14%+13%+12%+12%=51%
Contractor G, Contractor E, Contractor F, Contractor B
b. E&M Works
CR4=22%+13%+11%+9%=55%
Contractor H, Contractor I, Contractor J, Contractor K

III. By the nature of the developers
a. MTR
By company profile
21%+9%+6%+5%=41%
Contractor E, Contractor F, Contractor M, Contractor N

By sector of works
Main Works
26%+11%+7%+5%=49%
Contractor E, Contract F, Contractor M, Contractor O

E&M Works
22%+17%+9%+7%=55%
Contractor H, Contractor I, Contractor K, Contractor P

b. Government
By company profile
22%+23%+15%+15%=75%
Contractor G: Contractor B; Contractor C; Contractor Q

By sector of works

Main Works
23%+23%+15%+15%=76%
Contractor G: Contractor B; Contractor A; Contractor Q

E&M Works
Since the government works are still in the preliminary stage of construction and most of the contracts awarded are main works rather than E&M works, only in Kai Tak Development, the Penta and Concentric joint venture did drainage works for the sum of HKD$700,000,000.

Herfindahl-Hirschman Index Test
I. By company profile
HHI Test = H1^2+H2^2+...+Hk^2=0.07167

II. By sector of works
a. Main Works
HHI Test = H1^2+H2^2+...+Hk^2=0.0876
b. E&M Works
HHI Test = H1^2+H2^2+...+Hk^2=0.103

III. By the nature of the developer
a. MTR
By company profile
HHI Test = H1^2+H2^2+...+Hk^2=0.0730
By Trade Works
Main Works
HHI Test = H1^2+H2^2+...+Hk^2 = 0.1026
E&M Works
HHI Test = H1^2+H2^2+...+Hk^2 = 0.125

b. Government
By company profile
HHI Test = H1^2+H2^2+...+Hk^2 = 0.1747

By sector of works
Main Works
HHI Test = H1^2+H2^2+...+Hk^2 = 0.1787

E&M Work
Since the government works are still in the preliminary stage of construction and most of the contracts awarded are main works rather than E&M works, only in Kai Tak Development, the Penta and Concentric joint venture did drainage works for the sum of HKD$700,000,000.

6.34 Results

<table>
<thead>
<tr>
<th>CR4</th>
<th>Overall</th>
<th>MTR</th>
<th>Government</th>
</tr>
</thead>
</table>

35
<table>
<thead>
<tr>
<th></th>
<th>By company</th>
<th>Main works</th>
<th>E&amp;M works</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>46%--54%</td>
<td>41%--42%</td>
<td>75%--90%</td>
</tr>
<tr>
<td></td>
<td>51%--70%</td>
<td>49%--51%</td>
<td>76%--91%</td>
</tr>
<tr>
<td></td>
<td>55%--55%</td>
<td>55%--55%</td>
<td>N/A</td>
</tr>
<tr>
<td>HHI</td>
<td>Overall</td>
<td>MTR</td>
<td>Government</td>
</tr>
<tr>
<td>By company</td>
<td>0.072--0.089</td>
<td>0.073--0.075</td>
<td>0.175--0.242</td>
</tr>
<tr>
<td>Main works</td>
<td>0.085--0.109</td>
<td>0.103--0.105</td>
<td>0.179--0.248</td>
</tr>
<tr>
<td>E&amp;M works</td>
<td>0.103--0.103</td>
<td>0.125--0.125</td>
<td>N/A</td>
</tr>
</tbody>
</table>

Table 6.1 Market Concentration Results
6.4 Sensitivity Test
6.41 Introduction
It is found that the Contractor A is the parent company of B, however in the Ten Mega Projects, A formed joint venture with B and occupied great market shares in the research and so as the Contractor C and its subsidiary D who also formed joint venture in bidding. To get a more comprehensive understanding of the market concentration, a sensitivity test has been done to test how the result would be subject to the change of whether they are individual companies doing joint venture or they shall be considered as one integral company.

6.42 Calculation
CR4 Ratio Test
1. By company profile
CR4=19%+12%+12%+11%=54%
Contractor A (B); Contractor E; Contractor G; Contractor F;

II. By sector of works
a. Main Works
CR4=21%+14%+13%+12%=70%
Contractor A(B); Contractor E; Contractor F; Contractor G
b. E&M Works
CR4=22%+13%+11%+9%=55%
Contractor H; Contractor I; Contractor J; Contractor K

III. By the nature of the developers
a. MTR
By company profile
21%+9%+6%+6%=42%
Contractor E, Contractor F, Contractor M, Contractor B

By sector of works
Main Works
26%+11%+7%+7%=51%
Contractor E, Contractor F, Contractor M, Contractor A (B)

E&M Works
22%+17%+9%+7%=55%
Contractor H, Contractor I, Contractor K, Contractor P

b. Government
By company profile
37%+23%+15%+15%=90%
Contractor A (B), Contractor G, Contractor F, Contractor Q

By sector of works
Main Works
38%+23%+15%+15%=91%
Contractor A (B), Contractor G, Contractor F, Contractor Q

E&M Works
Since the government works are still in the preliminary stage of construction and most of the contracts awarded are main works rather than E&M works, only in Kai Tak Development, the Penta and Concentric joint venture did drainage works for the sum of HKD$700,000,000.

**Herfindahl-Hirschman Index Test**

I. By company profile

\[ \text{HHI Test} = H1^2 + H2^2 + \ldots + Hk^2 = 0.0884 \]

II. By sector of works

a. Main Works

\[ \text{HHI Test} = H1^2 + H2^2 + \ldots + Hk^2 = 0.1088 \]

b. E&M Works

\[ \text{HHI Test} = H1^2 + H2^2 + \ldots + Hk^2 = 0.103 \]

III. By the nature of the developer

a. MTRC

By company

\[ \text{HHI Test} = H1^2 + H2^2 + \ldots + Hk^2 = 0.075 \]

By Trade Works

Main Works

\[ \text{HHI Test} = H1^2 + H2^2 + \ldots + Hk^2 = 0.1054 \]

E&M Works

\[ \text{HHI Test} = H1^2 + H2^2 + \ldots + Hk^2 = 0.125 \]

b. Government

By company

\[ \text{HHI Test} = H1^2 + H2^2 + \ldots + Hk^2 = 0.242 \]

By sector of works

Main Works

\[ \text{HHI Test} = H1^2 + H2^2 + \ldots + Hk^2 = 0.2476 \]

E&M Works

Since the government works are still in the preliminary stage of construction and most of the contracts awarded are main works rather than E&M works, only in Kai Tak Development, the Penta and Concentric joint venture did drainage works for the sum of HKD$700,000,000.

### 6.43 Results

<table>
<thead>
<tr>
<th></th>
<th><strong>CR4 (A&amp;B as two individual companies; so as C&amp;D)</strong></th>
<th><strong>CR4 (A&amp;B as one integral company; so as C&amp;D)</strong></th>
<th><strong>HHI (A&amp;B as two individual companies; so as C&amp;D)</strong></th>
<th><strong>HHI (A&amp;B as one integral company; so as C&amp;D)</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>By Company</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Overall</td>
<td>46%</td>
<td>54%</td>
<td>0.07167</td>
<td>0.0885</td>
</tr>
<tr>
<td>2. MTRC</td>
<td>41%</td>
<td>42%</td>
<td>0.0730</td>
<td>0.074</td>
</tr>
<tr>
<td>3. Government</td>
<td>75%</td>
<td>90%</td>
<td>0.1747</td>
<td>0.242</td>
</tr>
<tr>
<td>Projects of MTRC</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-----------------</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>1. Overall</td>
<td>41%</td>
<td>42%</td>
<td>0.0730</td>
<td>0.075</td>
</tr>
<tr>
<td>2. Main Works</td>
<td>49%</td>
<td>51%</td>
<td>0.1026</td>
<td>0.1054</td>
</tr>
<tr>
<td>3. E&amp;M Works</td>
<td>55%</td>
<td>55%</td>
<td>0.125</td>
<td>0.125</td>
</tr>
<tr>
<td>Projects of Government</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Overall</td>
<td>75%</td>
<td>90%</td>
<td>0.1747</td>
<td>0.242</td>
</tr>
<tr>
<td>2. Main Works</td>
<td>74%</td>
<td>91%</td>
<td>0.1787</td>
<td>0.2476</td>
</tr>
<tr>
<td>By Work Trades – Main Works</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Overall</td>
<td>51%</td>
<td>70%</td>
<td>0.08476</td>
<td>0.1088</td>
</tr>
<tr>
<td>2. MTRC</td>
<td>49%</td>
<td>51%</td>
<td>0.1026</td>
<td>0.1054</td>
</tr>
<tr>
<td>3. Government</td>
<td>74%</td>
<td>91%</td>
<td>0.1787</td>
<td>0.2476</td>
</tr>
<tr>
<td>By Work Trades – E&amp;M Works</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Overall</td>
<td>55%</td>
<td>55%</td>
<td>0.103</td>
<td>0.103</td>
</tr>
<tr>
<td>2. MTRC</td>
<td>55%</td>
<td>55%</td>
<td>0.125</td>
<td>0.125</td>
</tr>
</tbody>
</table>

Table 6.2 Sensitivity Test Results
6.5 Assumptions & Limitations
A. All the Joint Venture businesses are considered as equally benefited in the profits due to the lack of necessary information.
B. The competition test can only be applied to the six projects out of the Ten Mega Projects since the rest either haven’t started or have no such public information published online that can be accessed.
C. Some of the data are missing, which may introduce some errors.
D. Government works is not persuasive because all the contract values for construction for the main bridge of Hong Kong Zhuhai Macau Bridge are not revealed on the website and the contract information hasn’t been updated since June 2013 and for other government works, many contract value also cannot be found on the official web page.
CHAPTER 7 IN-DEPTH STUDY METHODS & RESULTS
ENTRY BARRIERS

7.1 Literature Review

Ezulike (1997) has concluded the possible entry barriers in the construction industry including lack of appropriate skills; high participation costs; high project values; high risk; lack of credibility and contacts; and demands on management time and the high participation costs may account for the “two-tier” competition because larger contractors are more affordable to these fees. Gruneberg (2000), on the other hand, also identified six entry barriers for the construction industry including economies of scale, supply chains, incumbent cost advantages, private information (including client relationships), and contestable markets (no sunk costs) and “client imposed barrier to entry to contract construction market”, based on a view of contractor growth as a series of steps of increasing project size and complexity.

According to de Valence (2003), when the building industry is assessed in terms of barriers to entry it is clear that there are two levels in operation. There are currently few significant barriers to entry to the building industry for small firms, and such barriers will continue to be low while the industry maintains current practices based on a large number of small, specialised subcontractors. There are, however, a limited number of contractors capable of managing large projects, and the barriers to entry at this level in the form of prequalification are significant, based on track record, financial capacity and technical capability. (de Valence 2003: 5)

De Valence also conclude that there are significant barriers to entry through client prequalification requirements for technical capability, track record and financial capacity in engineering construction and non-residential, and some specialist trades have few firms capable of taking on large projects.

Basically all of the three papers verified the existence of two-tier competition in the construction industry and agree on the important impact of client procurement process. And the strong link between the clients and the few big contractors capable of taking large projects can be a great entry barrier. Gerard De Valence concluded that the shape of the industry structure is a flat pyramid, with a handful of very large contractors and a few large contractors at the top, and tens of thousands of small subcontractors at the bottom. (Valence, 2003) Entry barriers are also associated with the two-tier structure, which means the entry barrier of entering this industry are quite low while the barriers for bidding for high value contracts and becoming large contractors with great shares are very high in fact.

In conclusion, the entry barriers identified in the construction industry in Australia and UK are:

a. Lack of appropriate skills;
b. High participation costs or sunk cost
c. High project values & high risk;
d. Lack of credibility and contacts or client relationships
e. Economies of scale or incumbent cost advantages
f. Supply chains,
g. Client imposed barrier to entry to contract construction market
7.2 Particular Barriers in Hong Kong

The individual possible entry barriers are individually assessed as follows.

7.21 Capital Requirements

For capital requirements, compared to other industries, Hong Kong construction industry demands low on the entrance capital. And the common practice in this industry is to hire or rent large equipment on project by project basis rather than owning equipment. For participation costs and project value, many projects only require a sum of five to ten percent of the project value to be presented by the contractors to show the financial stability. So for small entrants, the capital requirements can hardly be a barrier to entry. However, for high-value contracts, the capital of the company might be required by the client through prequalification stage to exclude the small contractors which cannot provide huge capital.

7.22 Lack of Appropriate Skills

The lack of appropriate skills can be considered as a barrier to entry for the construction industry because though this industry has low uptake of new technology, the construction industry in Hong Kong is booming right now, causing the shortage of skilled workers. New entrants have to recruit skilled workers to compete with the incumbent firms, which means they may have to hire workers from other incumbent firms due to the lack of workers. And to attract workers, they may have to pay much higher wages compared with the incumbents.

7.23 Lack of Credibility and Contacts

Lack of credibility and contacts is truly a barrier to entry because nowadays, to ensure the quality of the construction and avoid the future disputes, many clients will check the track record of the bidders. For new entrants or small companies, the lack of credibility in doing large projects creates the concerns of their capabilities of completing the projects. And the clients will more rely on the contractors contacted before than a new contractor that the client hardly knew anything about it.

7.24 Economies of Scale

Economies of scale can act as a barrier to entry because the large companies usually take advantage of economies of scale, horizontal and vertical integration to reduce the unit production price, management costs and even transaction costs, for example, large contractors owning equipment can save costs for hiring and large contractors usually cover most sectors including main works and E&M works by establishing subsidiaries, etc.

7.25 Private Information

Private information or the strong relationship links with the developer is another entry barrier because for many large developers such as MTRC, contracts with relatively small contract value will be conducted as selective tendering. Only those firms on their list which may have cooperated with the developer will be invited to tender for the projects. New entrants or other small contractors generally have no access to such information.
7.26 Innovation Requirements

For large projects, innovation requirement is also considered as a barrier to entry, especially for government works. To promote innovation, the government unit such as Housing Authority will usually become the first to require the usage of the newest technology or materials such as their requirements on using precast concrete previously. However, the adoption and application of new technology and expertise is a huge investment that consumes great amounts of money, which is much more easily be realized by large contractors having sound financial support rather than new entrants.

7.27 Prequalification

It is very likely that prequalification or listing criteria, as in other countries, act as key factors of raising second entry barriers. Due to the high value and high risk of large projects, prequalification process is usually conducted to exclude unqualified contractors from directly bidding for the job. Such process will add more barriers for new entrants such as the track record of similar projects, the working capital requirements, or even the number of the management expertise that can be provided on site. For government works, the government only allows listed contractors bidding for contracts with certain contract values and it takes a long time for a new entrants to accumulate both capital and experience and get the approval only to be allowed to bid for jobs. Now in the construction industry in Hong Kong, there are just a few large contractors who are both capable of and willing to bid for those large projects and benefited from the strict prequalification process, their competitions are extremely limited.

Other than the concerns of the market concentration in UK and Australia, the construction industry in Hong Kong is also likely to have two-tier concentration and the high concentration of only a few big contractors for high-value projects. The Development Bureau has revised the admission requirements to the List of Approved Contractors in order to enhance the healthy competition in public sectors. According to its consultation paper, in the past five years, there is almost no increase in the number of the listed contractors and 10% of the Group C contractors (7 to 10 nos.) have occupied over 50% of the market shares by value. The public sector has serious market concentration issue because most of the projects in the public sectors are of high contract value and thus only a few contractors are capable as well as eligible to participated in bidding for the jobs.

After reviewing the empirical studies and analyzing the current contracting market in Hong Kong, it could be found that the entry barriers in Hong Kong also have two levels. They are of the lowest requirements for the new entrants while are raised to a high level for contracts with high value including the requirements on technical, financial and management compliances and these extra requirements are usually imposed by clients using prequalification stage, which means many small contractor cannot get the chance to compete with large contractors. The entry barriers are of two tiers, which divides the market into two tier markets with one occupied by a few large contractors sharing high value contracts and the other is full of numerous small contractors competing for the remaining small value contracts. Thus, the second tier entry barriers are worth more study, which can be assessed from the client’s requirements in listing or pre-qualifications.
Thus, the listing criteria from the government and the prequalification criteria from MTR are both assessed to find whether any second-tier entry barriers have been posed.
### 7.3 Government Listing Criteria

#### 7.3.1 Old Government Listing Criteria

<table>
<thead>
<tr>
<th>Group</th>
<th>Tender Limits</th>
<th>Financial Requirements</th>
<th>Technical Requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>&lt;=30 M</td>
<td>&gt;=1.8 M</td>
<td>Direct: two works over 15 M, similar in size and complexity with the Arch ASD projects</td>
</tr>
<tr>
<td>B</td>
<td>&lt;=75 M</td>
<td>&gt;= 4.2M</td>
<td>Direct: two works within 5 years over 37.5 M, similar in size and complexity with the Arch ASD projects; Promotion: 1 government contract over 22.5 M (Confirmed Group A); Considerable Scope and complexity; Cover the whole range trades</td>
</tr>
<tr>
<td>C</td>
<td>75M – 220M (max. 2 contracts)</td>
<td>&gt;=12.6 M</td>
<td>Direct: two works each over 220 M (5 yrs), similar in size and complexity with the Arch ASD projects; As main contractor</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Direct: two government works over 56.25M, similar in size and complexity with the Arch ASD projects</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Group</th>
<th>Tender Limits</th>
<th>Financial Requirements</th>
<th>Technical Requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>&lt;=30 M</td>
<td>&gt;=3.4 M</td>
<td>One Government work over 15 M; Satisfactory 5-year experience; Cover all ranges of building works</td>
</tr>
<tr>
<td>B</td>
<td>&lt;=75 M</td>
<td>&gt;=8.6 M</td>
<td>One Government work over 56.35M; Satisfactory 5-year experience;</td>
</tr>
<tr>
<td>B</td>
<td>&gt;75 M</td>
<td>&gt;=16 M</td>
<td>One government works over 90 M, Considerable scope and complexity</td>
</tr>
</tbody>
</table>

Table 7.1 Old Government Listing Criteria
## 7.32 New Government Listing Criteria

<table>
<thead>
<tr>
<th>Group</th>
<th>Tender Limits</th>
<th>Financial Requirements</th>
<th>Technical Requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Probationary</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A</td>
<td>&lt;=75 M</td>
<td>&gt;=2.1 M</td>
<td>Direct: 1 work over 37.5 M</td>
</tr>
<tr>
<td>B</td>
<td>&lt;=185 M</td>
<td>&gt;=4.9 M</td>
<td>Direct: 1 work over 129.5 M</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Promotion: 1 contract over 56.3 M</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(Confirmed Group A)</td>
</tr>
<tr>
<td>C</td>
<td>185M – 400M (max. 2 contracts)</td>
<td>&gt;=14.8 M</td>
<td>Direct: 1 work over 560 M</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Promotion: 1 work over 139 M</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(Confirmed Group B)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Group</th>
<th>Tender Limits</th>
<th>Financial Requirements</th>
<th>Technical Requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Confirmed</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A</td>
<td>&lt;=75 M</td>
<td>&gt;=4 M</td>
<td>1 work over 37.5M</td>
</tr>
<tr>
<td>B</td>
<td>&lt;=185 M</td>
<td>&gt;=10.1 M</td>
<td>1 work over 129.5M</td>
</tr>
<tr>
<td>C</td>
<td>&gt;185 M</td>
<td>&gt;=18.8 M</td>
<td>1 work over 280M</td>
</tr>
</tbody>
</table>

Table 7.3 Revised Government Listing Criteria
7.4 MTR Prequalification and Procurement Method

7.41 Introduction
Unlike the government listing criteria which is completely open to the public, the exact prequalification and procurement criteria or rating mechanism is not accessible. Thus, the assessment of the MTR’s procurement method will be conducted together with a verification stage. In the verification stage, the relevant questions will be set in the questionnaire and answered by the respondent to facilitate with the results finding.

7.42 Background Research
For most tender notices issued by MTRC, a prequalification stage is required to select the eligible contractors before bidding the prices. The prequalification will be posted to the public including the scope of works, key dates and the system to express interests. The interested contractors shall upload the relevant resources, qualifications and experience into the E-Tendering System.

In many prequalification invitations for Ten Mega Projects published by the MTR, the contractors are required to submit documents including design, planning, previous experience, management and technical resources, detailed head office overhead, profit associated with the construction works, a commercial framework relating to the Contractor’s share for the gainshare / painshare and details of the tenderer's proposed management costs for the Contract, auditing account for the last three years. Some contracts prequalification tenders states the preference to the contractors who are willing to set up partnership and have or intend to have office in Hong Kong. Some contracts prequalification tenders requires the contractors to submit the technical proposals based on the requirements given for this specific project.

The prequalification and procurement stage is very different from the government in that the MTRC sets the prequalification invitation differently for each project, giving different requirements on the documents to submit. It could be observed that all the contractors are being assessed in the prequalification stage also through technical and financial assessments but the detailed specific requirements are unknown.

Among the six projects that has commenced, there are three led by the MTRC. In the sector of main contracting market, there are 17 contractors winning tenders, and all the contractors are listed contractors with only 1 Group A contractor and 2 Group B while the rest is all belonging to Group C. While in the sector of E&M market, over 10 contractors are not listed contractors.
7.43 Verification Stage
To understand the exact process of the procurement method in MTR, a questionnaire was sent to the respondent.

The flow chart below shows the procurement mechanism the MTR has. For major work, MTR adopted a selective tendering going through prequalification and detailed assessment stages. For minor works, MTR adopted a permanent list revised regularly.

As for the routine of the selective tendering in MTR, the respondent stated that MTR has an open prequalification stage first and after the first assessment of financial and technical compliance, they shortlist 5 to 8 contractors to bid for the project and after the return, they do detailed assessment and award the contract.
The respondent stated that MTR considers all the factors in shortlisting the companies including the audited accounts, guarantee from the parent company, technical proposals, innovation ideas and so on to shortlist the tenderers specific to each contract, even including the contractors not listed by the government. MTR adopted similar shortlisting criteria by assessing financial, technical and management criteria but the actual implementation varies subject to the different nature and complexity of the contract. To facilitate the shortlisting procedure, each contractor shall complete a prequalification questionnaire covering the questions of the following seven areas:

1. **Company’s Management Structure / Corporate Relations**;
2. **Project Experience up to recent 10 years**;
3. **Resources including staff, labour and sub-contractors**;
4. **Specific technical skills / experience**;
5. **Project management skill and partnering knowledge**;
6. **Company’s Safety policy, quality management, environmental management, risk management, system assurance, ethical code of conduct and convictions and Corporate social responsibility**; and

7. **Company’s financial eligibility**:
   a. **Company’s Ownership Information**
   b. **Financial and Audited Account**
   c. **Maximum and minimum value of contract that the potential candidate can take**.
   d. **Contract Commitments – previous, current and future**
   e. **Maximum amount of performance bond from the potential candidates’ banker can offer**

The contractors will be scored by the pre-determined marking scheme made suitable for the specific contract.

After shortlisting the qualified contractors, those contractors are required to submit a formal tender and the technical team of MTR will assess the technical compliance, capabilities and competency and the two contractors with the highest scores will be recommended for detailed assessment.

At the detailed assessment, the two shortlisted tenderers’ submissions will be
scrutinized in more specific details about their method of working, programme practicability, specific project team structure, plant and resources level. The commercial team will assess the pricing documents, bonds or front-loading issues.

The respondent of MTR stated that MTR has been dedicated to enhancing competition by posting Express of Interest not only on the website but also inform Hong Kong Construction Association and Department of Liaison Office of the Central People’s Government and local representatives to notify the potential candidates in mainland China.

CHAPTER 8 IN-DEPTH STUDY DISCUSSION

8.1 Discussion for Market Concentration Level

8.11 Threshold for Market Concentration

a. US Antitrust DOJ Horizontal Merger (behaviour thresholds)

In the Horizontal Merger Guidelines published by the Department of Justice (DOJ), the market concentration level is defined by Herfindahl-Hirschman Index (HHI). This standard has experienced three changes. On and before 1960s, the approach of using market shares to indict the concentration level is the only standard. But from 1960 to 1970s, the court and the anti-cartel organizations all tended to use the CR4 (four-firm concentration ratio) to indicate the concentration level. But in the final merger guidelines in 1997, the HHI is the major principle to indicate the concentration ratio adopted by DOJ.

Based on their experience, the Agencies generally classify markets into three types:

1. Unconcentrated Markets: HHI below 1500.
2. Moderately Concentrated Markets: HHI between 1500 and 2500.
The Agencies employ the following general standards for the relevant markets they have defined:

**Small Change in Concentration:** Mergers involving an increase in the HHI of less than 100 points are unlikely to have adverse competitive effects and ordinarily require no further analysis.

**Unconcentrated Markets:** Mergers resulting in unconcentrated markets are unlikely to have adverse competitive effects and ordinarily require no further analysis.

**Moderately Concentrated Markets:** Mergers resulting in moderately concentrated markets that involve an increase in the HHI of more than 100 points potentially raise significant competitive concerns and often warrant scrutiny.

**Highly Concentrated Markets:** Mergers resulting in highly concentrated markets that involve an increase in the HHI of between 100 points and 200 points potentially raise significant competitive concerns and often warrant scrutiny. Mergers resulting in highly concentrated markets that involve an increase in the HHI of more than 200 points will be presumed to be likely to enhance market power. The presumption may be rebutted by persuasive evidence showing that the merger is unlikely to enhance market power.

<table>
<thead>
<tr>
<th>Market Types</th>
<th>Thresholds</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unconcentrated Market</td>
<td>HHI &lt; 0.15</td>
<td>Unlikely to have adverse competitive effects</td>
</tr>
<tr>
<td>Moderately Concentrated Market</td>
<td>0.15 &lt; HHI &lt; 0.25</td>
<td>Delta &gt; 100 can raise significant competition concerns</td>
</tr>
<tr>
<td>Highly Concentrated Market</td>
<td>HHI &gt; 0.25</td>
<td>100 &lt; Delta &lt; 200 often warrant scrutiny; Delta &gt; 200 will be presumed to enhance market power.</td>
</tr>
</tbody>
</table>

Table 8.1 U.S. Department of Justice Threshold

*b. US United States Government Accountability Office*

The U.S. Government Accountability Office (GAO) is an independent, nonpartisan agency that works for Congress. Often called the "congressional watchdog,"

Our work leads to laws and acts that improve government operations, saving the government and taxpayers billions of dollars.

<table>
<thead>
<tr>
<th>Market Types</th>
<th>Thresholds</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unconcentrated Market</td>
<td>CR4 &lt; 40%</td>
</tr>
<tr>
<td>Loose Oligopoly</td>
<td>40% &lt; CR4 &lt; 60%</td>
</tr>
</tbody>
</table>
Tight Oligopoly | CR4>60%
---|---

Table 8.2 U.S. Government Accountability Office Threshold

c. EC (European Competition Commission)

In the Guidelines on the Assessment of Horizontal Merger under Council Regulation on the Control of Concentrations between Undertakings.

The article 15 provides that EC normally still relies on the market shares of the involved firms in doing the market concentration test but the article 16 also states that EC also adopts HHI as a useful tool to give the information about the competition situations.

When the merger guidelines was first published, market shares is the only standard to judge whether the merger shall be approved. EU considered the post-merger market share of the merged company greater than 50% itself can be an evidence of the market dominance of the firm. However, the firms with the market shares below 50% may raise the competition concerns considering other factors such as the strength and number of the competitors, the presence of capacity constraints or the extent of the substitutes.

The law regulates that the firm with the market share higher than 50% can be considered as dominant but it cannot decide that the firms with the market shares below 50% are not dominant. The lowest threshold is 25%. But using market shares is not a good method. In the case of Federal Trade Commission v H.J.Heinz, Co., Heinz, Beech-Nut and Gerber individually have the market shares of 15%, 17% and 65%, and the court believed that the merger would substantially lessen competition and thus rejected the merger request. If according to the standard of market shares adopted by EC at that time, the post-merger market share is 33%, EU is very likely to approve this merger and lead to oligopoly of two giant companies.

Thus HHI is introduced to test the market concentration to avoid such mistakes. In using HHI Index, for merger whose post-merger index below 1000 (0.1), EC won’t do extensive analysis. For the merger with which the post-merger index is between 1000 and 2000 (0.1-0.2) and the delta is below 250 (the difference between post and pre merger) or the index is above 2000 (0.2) but the delta is below 150, the EC will be unlikely to identify the competition concerns on the merger.

Since EU doesn’t clearly specify the thresholds to define different concentration levels of the market. We can only presume the classifications of the concentrations by studying how strictly they regulate the merger for different HHI level. Basically, the more restriction EC will give to the merger case, the more likely and to the greater extent the market is concentrated. From which we can indicate that the EC considers the market where the HHI is below 1000 as unconcentrated markets without any concerns because there is basically no restriction. The market with HHI between 1000 and 2000 has the restriction of the delta below 250, which indicates that the EC may consider such market as a moderately concentrated market. The market with HHI above 2000 may be considered as high concentrated market because the restriction is
the strictest which require the delta to be below 150, otherwise there may be a deep investigation into whether the merger could be approved.

<table>
<thead>
<tr>
<th>EU</th>
<th>Unconcentrated (undominant)</th>
<th>Moderately Concentrated (subject to other factors)</th>
<th>Highly Concentrated (dominant)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Market Shares (post merger)</td>
<td>&lt;25%</td>
<td>25%-50%</td>
<td>50%</td>
</tr>
<tr>
<td>HHI</td>
<td>HHI &lt;0.1</td>
<td>0.1&lt;HHI&lt;0.2</td>
<td>HHI&gt;0.2</td>
</tr>
</tbody>
</table>

Table 8.3 European Commission Threshold

d. Singapore

Generally, competition concerns are unlikely to arise in a merger situation unless:

- The merged entity has/will have a market share of 40% or more; or
- The merged entity has/will have a market share of between 20% to 40% and the post-merger combined market share of the three largest firms is 70% or more
- The two principal measures used by the CCS in examining market concentration and structure are market shares and concentration ratios.

Singapore uses CR3 and market shares as the standards to determine whether the market is concentrated or not.

<table>
<thead>
<tr>
<th>Market shares</th>
<th>CR3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unconcentrated Market</td>
<td>&lt;20%</td>
</tr>
<tr>
<td>20%-40%</td>
<td>&lt;70%</td>
</tr>
<tr>
<td>Concentrated Market</td>
<td>&gt;40%</td>
</tr>
<tr>
<td>20%-40%</td>
<td>&gt;=70%</td>
</tr>
</tbody>
</table>

Table 8.4 Competition Commission of Singapore Threshold

f. China Anti-Monopoly Law

The following tables lists the situations where the concentration of undertakings must declare to the government before the real concentration of the undertakings takes place. Unlike other countries using market shares or CR4 or HHI to indicate the market concentration level, the Chinese anti-Monopoly law uses annual single or combined market shares to indicate the market power and the market position of the undertakings.

<table>
<thead>
<tr>
<th>Presumed Dominance</th>
<th>Presumed to be</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. one undertaking market share &gt; 50%</td>
<td>dominant</td>
</tr>
<tr>
<td>2. Two undertakings market shares &gt; 66.66% (CR2 &gt; 66.66%)</td>
<td>dominant</td>
</tr>
<tr>
<td>3. Three undertakings market shares &gt; 75% (CR3 &gt; 75%)</td>
<td>dominant</td>
</tr>
</tbody>
</table>
Table 8.5 China Concentration Threshold

\textit{f. Other Countries}

For other countries and areas, Taiwan has a structural threshold of 70\% market shares for the merged firms, Korea and Indonesia has a threshold of 50\% market shares for the merged firms and in Russia, the threshold is reduced to 35\%.
8.12 Interpretation

In analyzing the contract values for the ten mega projects, it is found that the information of the projects directed by MTRC is much more comprehensive and detailed than the projects directed by the government. In addition, the progress of the MTRC projects is more advanced than the government projects and thus the contracts awarded can cover both the main works and E&M works while some government projects only cover 3 to 4 contracts of constructing artificial islands due to the slow progress and no E&M contract has been awarded. Thirdly, the tendering system between MTR and government is different and thus it is reasonable to discuss them separately.

The sensitivity test is done to see how much effect it will be done to the result that Draggages and Bouygues be counted as one integral firm rather than joint venture. And the conclusion is that it raises both CR4 and HHI in most items, however, it has no impact on the E&M works mainly because they didn’t take any E&M projects and it affects much greater in the overall and government project than in the MTRC projects because they did two projects in government but only one in the MTRC. It strongly increases the concentration level the main works for government project.

In interpreting the concentration level by CR4, if adopting the standard published by the US Accountability Office, then all of the markets shall be considered as at least loose oligopoly rather than competitive because all the ratios are over 40% but most of them are not reaching 60%. Only the government works and the overall and government main works in the sensitivity test actually can be considered as tight oligopoly. But they may be due to the lack of information and late progress of awarding contracts for government’s projects.

In interpreting the concentration level by HHI, if adopting the threshold from DOJ, most of the data for the markets show that the markets are unconcentrated markets (lower than 1500), and only the government projects can be considered as moderately concentrated, which was largely caused by the lack and lateness of information and was very likely to be inaccurate. If adopting the thresholds from EU (lower than 1000), in addition to government works, E&M works also fall into the category of moderately concentrated. And the government works in the sensitivity test group even falls into the category of highly concentrated. However, the data for E&M and government works are incomplete and not that accurate as the main works or MTRC works.

It can be observed that the conclusions got from using HHI and CR4 are totally different. The possible reasons are explained as follows.
8.13 Difference between CR4 and HHI

An example can help to illustrate the difference:

If the four firms which have the top 4 market shares which are individually 23%, 20%, 18% and 15%, then the CR4 would be 76%, which would definitely be considered as oligopoly or highly concentrated market because in the merger rules by Department of Justice (DOJ) in 1968, the market with CR4 higher than 75% shall be considered as highly concentrated market. However, if the other 24% is shared by 6 other companies averagely of 4% each company, the HHI will be 1574, which is moderately concentrated market. If the 24% is shared by 30 small companies averagely, HHI will be 1497.2, which is an unconcentrated market.

The advantages of HHI test is that it considers all the participants in the market and it uses the weighted average of market shares to decide the concentration level in the sense that the firms with larger market shares have greater control on the market concentration level. The advantage can be illustrated by the following example:

Market 1: CR4=20%+20%+20%+20%=80%

Market 2: CR4=55%+20%+3%+2%=80%

CR4 has given the exactly same level of market concentration but the real competition level may be totally different in that in the first market, the leading four firms may compete fiercely to become the largest firm which in the second market, there is already a leading and dominant firm. In this sense, HHI is more comprehensive and sensible because it considers the different influential impact of different sized companies.

While the disadvantages of HHI test is that it in fact raises the threshold of the market to be considered as concentrated and reduces the regulation forces because as long as there are sufficient very small-scaled companies occupying really small shares of the market, the HHI test would consider it unconcentrated even if there have been 4 firms already occupying 76% of the market shares.

What’s worth mentioning is that the different result can only be shown when the companies are sizable companies rather than really giant companies which occupies 50% or even more. When the companies being tested are either extremely small or big, the results from CR4 and HHI will be the same.

For example, if the largest four firms have the same market shares of 9%, the remaining is distributed by 16 companies each has 4%.

CR4=9%+9%+9%+9%=36% <40%
HHI=9^2*4+4^2*16=452 <1500

Both methods have given the same result that the market is unconcentrated.
Another example is that if the market has the four biggest companies whose market shares are individually 45%, 20%, 10%, 5%. The remaining 20% shall be distributed averagely by 10 companies.

\[
CR4 = 45\% + 20\% + 10\% + 5\% = 80\% > 75\%
\]

\[
HHI = 45^2 + 20^2 + 10^2 + 5^2 + 10*2^2 = 2590 > 2500
\]

Both Methods have given the same result that the market is highly concentrated.

As a result, the difference mainly focuses on the markets where the largest 4 firms are sizable firms. Provided that CR4 is the same, where there are sufficient extremely small companies which have high difference in market shares with the big four, the HHI will tend to reach the conclusion of an unconcentrated market while when the remaining market shares are shared by fewer medium companies, the HHI may get a totally contrary result. Even a market where there are only five companies, each occupying 20%, the HHI can only show a moderately concentrated market while the CR4 already shows a highly competitive market. That is also why some anti-cartel organizations claims that the government is loosening the regulation on anti-competitive behaviours by raising the thresholds.

The second problem is that HHI is more sensitive to the definition of the same market because it squares the market share and calculates all the firms’ market shares while CR4 only cares about the first four firms. Whether the company having market shares of 20% is really selling the reasonable interchangeable products and in the same market with the small companies having only 1% market share is worth more concern. Because in this test, the number and market shares of the remaining small companies become the key to determine whether the market is concentrated when the leading companies are sizable companies. Though they may be providing the products of the similar characters, but the firms always try to provide differentiated products, which causes the result that some similar products cannot be perfect substitute. The interchangeable products must not only substitutable in nature and usage but also in prices, function, brand value and even shall target at the same group of consumers. The consumers shall be sensitive the change of prices and turn to another products as substitutes. Especially when the firm has a big famous brand which the consumers trust, the consumers will not turn to other products even the famous firm raises prices. But no deny that HHI is more accurate and comprehensive on the grounds that the market can be defined accurately and not too broadly.
8.14 Discussion

In analyzing the results, after looking at all the 78 contractors and their standing percentage of the whole contract value awarded, it could be found that basically other than the top 5 or top 6 contractors (such as Contractor A, B, E, F, G, M), each having great shares around 10% to 20%, most of the other contractors can only occupy 0.1% to 2%. The huge gap in abilities and size between the contractors give rise to the differentials in the result of CR and HHI.

However, the results can be examined from another angle that would explain the reasons leading to the difference. The results show the different concentration level between relatively large contractors and small contractors. CR4 is high because only 4 contractors actually occupy over 50% or even 60% market shares, which means a few companies have occupied the majority of the markets. HHI is relatively low because the rest of the market shares have been shared by numerous contractors, each of which only occupying 0.1% to 1%. Their existence lowers the HHI value. Combining the two results, it can be concluded that the competition level of the Ten Mega Projects is not uniform. It’s worth mentioning that these results are based on the use of contract value as indicator of market share. Thus it could be concluded that the competition for high contract value projects is quite low while the competition for low contract value contracts is extremely high.

As afore-mentioned, HHI is much more sensitive to the definition of relevant market and require the interchangeable projects must be perfect substitutes. In most western countries including USA and Europe, the Ordinance and Guideline uses hypothesis test (SSNIP) to exercise small but significant price increase to determine the range of substitutes. However, it is very hard to do SSNIP test by researching how all the clients would react based on this test and it is also difficult to figure out whether all these contractors, though providing similar main contractor works, are in fact perfectly substitutable in providing similar standards of workmanship, providing similar safety management or providing similar innovative technology and so on. Using HHI may lead to over broad definition of the market and smaller results than the real concentration level. This is why HHI in this case may not be able to reflect the real market concentration level. But the different results from HHI and CR4 (HHI results show that the market is not concentrated while the CR4 indicates the contrary) are significant in reflecting the characteristics of the two-tier market (only the market for large contractors is concentrated while the small contractors are still in a highly competitive market).

As for the Ten Mega Projects, it can be said that the market is moderately concentrated, mainly due to the several large contractors having occupied most of the market shares. This is further supported by the consultation paper from the Development Bureau stating that “10% of Group C contractors have occupied the market shares by over 50% by value.” And it could be observed that the concentration level is very high for the high-value awarded contracts (from analysis of the contract value, it can be observed that for the contract value over HKD\2,000,000,000, the companies awarded are highly repetitive.). For the remaining contractors, the concentration level is very low in competing for the low-value contracts. The different concentration level for high-value contracts and low-value contracts as well as the phenomenon of only 4 to 5 contractors occupying the majority of the market shares...
might be explained by the entry barrier. The oligopolistic market situation has long been overlooked due to the existence of numerous small contractors who operate in a highly competitive market environment. Further details will be provided in the section on entry barrier.

The high concentration ratio shown in CR4 suggests loose oligopoly of the top 4 to top 5 large contractors and such oligopoly is likely to lead to cartels to control the market, which may infringe the first conduct of Competition Ordinance and if one contractor could continuously increase its market shares, it may have dominant market power, and if abuse behaviour is resulted, the second conduct rule may be infringed.

### 8.2 Discussion on Entry Barriers

#### 8.2.1 Old Government Listing Requirements

<table>
<thead>
<tr>
<th>Group</th>
<th>Tender Limits</th>
<th>Financial Requirements</th>
<th>Technical Requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Probationary</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A</td>
<td>&lt;=30 M</td>
<td>&gt;=1.8 M</td>
<td>Direct: two works over 15 M, similar in size and complexity with the Arch ASD projects</td>
</tr>
<tr>
<td>B</td>
<td>&lt;=75 M</td>
<td>&gt;=4.2 M</td>
<td>Direct: two works within 5 years over 37.5 M, similar in size and complexity with the Arch ASD projects</td>
</tr>
<tr>
<td>C</td>
<td>75M – 220M (max. 2 contracts)</td>
<td>&gt;=12.6 M</td>
<td>Promotion: 1 government contract over 22.5 M (Confirmed Group A); Considerable Scope and complexity; Cover the whole range trades</td>
</tr>
<tr>
<td><strong>Confirmed</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A</td>
<td>&lt;=30 M</td>
<td>&gt;=3.4 M</td>
<td>One Government work over 15 M; Satisfactory 5-year experience; Cover all ranges of building works</td>
</tr>
<tr>
<td>B</td>
<td>&lt;=75 M</td>
<td>&gt;=8.6 M</td>
<td>One Government work over 56.35M; Satisfactory 5-year experience;</td>
</tr>
<tr>
<td>C</td>
<td>&gt;75 M</td>
<td>&gt;=16 M</td>
<td>One government works over 90 M, Considerable scope and complexity</td>
</tr>
</tbody>
</table>

Table 8.6 Old Government Listing Criteria

**a. Barrier of Probationary Period**

The requirement of the two-year probationary period has been removed from the revised admission requirements to enhance competition because in the original requirements, any newly included contractors can only be probationary contractor and after he has satisfied the requirements such as completing one government work with
considerable scope and complexity and he still has to wait for another two years for the confirmation. This could be a long time for a contractor to grow into a confirmed group C contractor. Also for foreign big contractor, the fixed probationary period has become a high entry barrier to restrict their entry due to the long waiting time to be admitted into the confirmed Group C contractors.

b. Barrier of financial and technical requirements

The admission to Group C has two routes, either through promotion or directly admitted to Group C Probationary. For the route of promotion, the barrier is quite low but it takes very long time for a small contractor with low capital to grow into a confirmed Group C contractors through promotion (at least 6-year probationary period plus the time for construction to satisfy the technical requirements). For the route of direct admission to Group C probationary, the high entry barrier is the very high capital requirements and financial and technical support to get the contracts with higher level.

c. Restriction on type of the previous contract accountable

The confirmation requires the previous government contract completion, which largely limits the ways to prove the technical abilities because all the contracts done in private sectors cannot be counted as admitted track records.

d. Lack of low-value government contracts

It could be found that there are very few government contracts with value lower than 30 million, especially for main contractors but in order to be confirmed, the contractor must complete a government contract and it could become a entry barrier for the contractors using promotion route to grow to Group C contractors.

e. Requirements on similar scope and complexity and all range coverage

The requirements of similar scope and complexity as well as all range coverage further restricts the previous completed works that could be accountable. Contractors may not be admitted because their previous work is not similar to the work of Arch ASD or their work is only concentrated in one range, making the admission even more difficult.

f. Inflexible requirements for all the contracts

It is understandable that the government needs listing mechanism to ensure the quality of the works. However, the problem is that the government only uses contract value as the sole method to divide the contracts into three categories and require the contractors to meet the standards respectively. Contracts of the same value are very likely to have totally different characteristics depending on the nature and complexity of the works. Using the same technical, financial and management requirements to list the contractors and limit their eligibility to bid for the works is unfair. This mechanism is likely to exclude the opportunities for many small expertise contractors to bid for the projects of high value but with simple works. The standardized criteria only depending on the contract value may be very easy and fast to apply, but is very likely to be unsuitable to the project and impose unnecessary high requirements.
8.22 Revised Government Listing Criteria

<table>
<thead>
<tr>
<th>Group</th>
<th>Tender Limits</th>
<th>Financial Requirements</th>
<th>Technical Requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>&lt;=75 M</td>
<td>&gt;=2.1 M</td>
<td>Direct: 1 work over 37.5 M</td>
</tr>
</tbody>
</table>
| B     | <=185 M       | >=4.9 M                | Direct: 1 work over 129.5 M  
  Promotion: 1 contract over 56.3 M  
  (Confirmed Group A) |
| C     | 185M – 400M   | >=14.8 M               | Direct: 1 work over 560 M  
  Promotion: 1 work over 139 M  
  (Confirmed Group B) |

<table>
<thead>
<tr>
<th>Group</th>
<th>Tender Limits</th>
<th>Financial Requirements</th>
<th>Technical Requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>&lt;=75 M</td>
<td>&gt;=4 M</td>
<td>1 work over 37.5M</td>
</tr>
<tr>
<td>B</td>
<td>&lt;=185 M</td>
<td>&gt;=10.1 M</td>
<td>1 work over 129.5M</td>
</tr>
<tr>
<td>C</td>
<td>&gt;185 M</td>
<td>&gt;=18.8 M</td>
<td>1 work over 280M</td>
</tr>
</tbody>
</table>

Table 8.7 Revised Government Listing Criteria

8.221 Comparison with old listing criteria

1. Probationary Time Limits

The 24-month probationary time limit has been removed in order to encourage more big contractors to participate in the competition and to accelerate the small contractors to be admitted and eligible to bid for high-value contracts.

2. Extension of admitted previous contracts

As for the technical requirement, the completion of non-government works are revised to be counted to lower the thresholds and requirements.

3. No specific requirement on the similarity or range coverage

The requirements of similarity, complexity and all range coverage have been removed to further reduce the difficulty of meeting these criteria.

The revised criteria has taken place from 1 December 2013. The revision has largely reduced the height of entry barriers by lowering the requirements of track records and eliminating the minimum probationary time. However, there are still some remaining entry barriers which may cause high concentration of large contractors in public sector, especially for high-value contracts.

8.222 Remaining Entry Barriers

a. Time Factor

From the above, it could be observed that the financial requirements are not unreasonably high compared with the tender limits. However, it is still very hard for a newly entered companies to have over 18 million working capital and the track record of contract value over 560 million and thus be admitted to Group C probationary because both the working capital and the track record shall be accumulated over years. So for most contractors, it takes time for them to gradually develop into Group C contractors. Though there is no longer time limit for probationary period, it still takes decades to accumulate the working capital and
working experience to fulfill the requirements. For those years, these Group A and B or even non-listed contractors cannot bid for the similar value jobs with Group C contractors, so they cannot be counted as the competitors for public works. And the potential competitors who haven’t entered the market cannot enter the market of public works over 185 million because they can’t satisfy the requirements even if there exists huge marginal profits which can attract more competitors to enter until the marginal profits become zero in theory.

b. Barrier of tender limits
Though all the approved contractors can bid for contracts of certain value, there are very few contracts of contract value below 75 million or below 75 to 185 million. Take the project of Tuen Mun – Chak Lap Kok Link and Tuen Mun Western Bypass as an example, only one contract is between 75 million to 185 million, no contract is below 75 million and most contracts are at least for several billions. And the only one Group B contract is awarded to a Group C contractor (Gammon). What’s also worth mentioning is that for Probationary Group C contractors, they cannot have more than two contracts with the overall contract value exceeding 400 million. However, most of the contracts awarded in the public sectors are over 400 million, which directly results in the outcome that only Confirmed Group C contractors (70 nos) can tender for the government works and not all the confirmed Group C contractors are still actively bidding for jobs and thus further reduce the competition level in bidding for the government works.

c. Locality restriction on track records
Though the government has removed the requirements of government contracts, it still have requirement on the location of the contracts that the work must be in Hong Kong, which may limits the entrance of the foreign company to be admitted and bid for the job in public sector.

d. Inflexible requirements for all the contractors
This is the same problem as in the old listing criteria that the contractors have to fulfill the same criteria for different contracts as long as their contract value is within certain range, which is not reasonable because the value can be controlled by much more factors than just the complexity or difficulties. The contracts of the same value could be totally different and thus shall require different capacity or qualities from the contractors. Using the same criteria is not suitable and may cause problems. The reason why prequalification may impose the second entry barriers is that the tendering procedure itself has already been a competition but the prequalification stage has precluded small contractors from the opportunity of bidding for jobs. And in some cases, the clients put too much emphasis on the requirements of financial capabilities or track records which might be unnecessarily high for the contracts. The most important part is the tendering itself, the tender price, and the technical proposals that the contractor bid. Reasonable requirements are necessary to ensure qualities while too high the criteria might impose the negative effects of oligopoly situation.

The government’s project contract information hasn’t been updated for a long time and there is few contract information, which may account for the high CR4 or HHI results in assessing market concentration. However, the second entry barrier set by the government’s listing system may also account for it. Most of the government’s contracts
are worth more than 400 million and thus the potential competitors are always restricted in the Group C contractors while many of them have long been inactive, and thus the competition is very restricted. The listing mechanism deliberately divides the market into four sectors, unlisted, Group A, Group B and Group C contractors where the contractors can only compete in the sector he belongs to. And since the number of active Group C contractors is the least while the number of contracts falling into the category of Group C is largest and the values are very huge as well, which helps those contractors to have sizable market shares and market power, which is easier for them to form cartel or collusive agreements.
8.3 Discussion on MTR’s procurement methods

As for the MTR’s standard procurement procedures, the permanent list is used for minor works and selective tendering is used for major works.

As for the permanent list, there exists an invisible barrier which is the client relationship. It is understandable that the client choose the contractor who has cooperated with the client to perform the job but for some small new entrants, the lack of client relationship may be an entry barrier to them. Compared with the government’s listing, one advantage of MTR’s listing is that the list is revised and updated regularly though the respondent didn’t reveal the exact revision intervals. In the government listing, many approved contractors have long stayed been inactive to bid for works. The government’s listing is more likely to be a permanent entitlement which may bring about undesirable results in selecting eligible contractors.

As for selective tendering, a prequalification stage is employed to select the eligible contractors to bid for the tender. However, the detailed rating mechanism or specific requirements on financial, technical or management compliances haven’t been revealed by the respondent in the answers. But one advantage over the government’s listing criteria is that MTR determines the requirements subject to the nature and complexity of different projects, not just depending on the contract value. This is much more flexible and reasonable to select the qualified contractors. Due to the lack of detailed criteria, it is unlikely to discuss whether the criteria of financial or technical compliance is within the reasonable range.

In these two aspects with the limited information, the procurement and prequalification criteria of MTR is better than the government’s listing criteria, which might to some extent explain the reason why the CR4 and HHI of MTR main works are lower than the government’s. However, the CR4 for MTR main contracting works is also around 50%, with 14 contractors winning the tenders are Group C contractors and only three belong to Group A or B. Though the criteria is made depending on different projects, the prequalification stage, as a matter of fact, has indeed become barriers for the small unlisted contractors to get the job.

Setting prequalification requirements is a good to ensure qualities but the criteria and height of the requirements must be seriously thought over and planned. Big contractors can always pass the prequalification, but small contractors are much more sensitive any change in the criteria. The overly high standards may cause the result that there are always these four or five contractors are allowed to bid for the jobs and thus the concentration level would be increased to great extent.

In conclusion, though the government has revised the listing criteria, MTR’s procurement system still has some advantages over that of the government in that the permanent listing MTR is keeping is updated regularly and it makes the prequalification criteria subject to the project. However, the respondent of MTR didn’t give detailed prequalification criteria and thus it is not likely to discuss whether the criteria is harder or simpler for contractors to meet. However, though the MTR doesn’t prevent unlisted contractors from expressing interests through prequalification stage, the results are the same with the government projects that all the contractors for main works are listed contractors with only three of them not belonging to Group C. It is likely that MTR’s detailed prequalification criteria has the similar effects of the government’s listing
mechanism. In addition, MTR uses the permanent listing for minor works, which reduces the small contractors’ chances of setting up links with MTR starting from the small projects and at the same time the small contractors might not be able to pass the prequalification stage due to lack of track records or financial support, which makes small contractor very difficult to get the job from MTR.

In broad definition, all the main contracting contractors are in the same market while in fact, the small contractors are prevented by the prequalification or listing process from entering the market to compete with large contractors, which worsen the oligopoly of the large contractors, causing two-tier concentration levels.

8.4 Suggestions for MTR Procurement

MTR procurement method is better than the government procurement method in terms of enhancing competition mainly because they prepare and determine the selection criteria in prequalification stage subject to the different situation of each case rather than only relying on the contract value. In theory, MTR’s selective tendering system shall not have great anti-competitive effects because it leaves at least 5 contractors to tender evaluation. But the results still shows very slight oligopoly market. Part of the reasons might be because of the high value of each contract, which attracts large contractors to compete and due to the huge gap in both technical and financial capabilities between large contractors and small contractors, it is normal that several large contractors can win more than one contracts in one project. Many large contractors even did joint venture to further enlarge their scale, further reducing the competition and increasing the market concentration.

To further improve its procurement system, the MTR procurement system can refer to the procurement system adopted by the European Commission. A few MTR’s invitation of Expression of Interest has contained the detailed requirements such as requiring the related working experience in the past three years. But most of the invitations don’t contain such specific requirements. Thus it is suggested that the specific requirements are recommended to be inserted in the invitations to improve the efficiency such as the minimum working capital or minimum years of relevant working experience just like the listing criteria. The contractor who found himself not qualified won’t trouble to prepare the documents for prequalification and MTR can save unnecessary troubles and time in assessing these documents.

The government’s listing mechanism has invisibly established the multi-tier entry barriers dividing contractors into different groups to compete in segregated markets. The few number of group C contractors can bid for the most of the contracts while numerous Group A or B contractors can only bid for one or two contracts for a project, creating different concentration levels. The mechanism needs to be further revised to allow more competition for the contracts of high value and to encourage the development of small contractors to solve the problem of the two-tier market situation. The suggestions have been raised to enhance competition to solve the loose oligopoly among large contractors for government and to further improve MTR’s procurement system.
CHAPTER 9 CONCLUSION & SUGGESTIONS

9.1 Conclusion

On the matters of levels of competition of the construction industry, the literature review of the foreign construction cases and some reports on Hong Kong’s construction industry displays inconsistent view from the pilot study. This FYP provides an in-depth study of the market concentration, especially in the light of the major projects undertaken in Hong Kong at the moment. Data from Ten Mega Infrastructure Projects was analyzed. The findings suggests that the construction industry in Hong Kong is a two-tier industry with the market for small contractors and low-value jobs fully competitive while the market for large contractors and high-value jobs moderately concentrated. After reviewing some empirical studies on two-tier construction markets, prequalification stage or listing mechanism proposed by the clients are likely to be the cause of the second entry barriers which are much higher than the primary barriers. Thus, in-depth study on entry barriers is conducted to assess whether the listing or prequalification stage has any anti-competitive effects which prevent small contractors from entering the second tier market. In comparison from the limited information which is accessible, MTR’s prequalification has the least restrictive effects while the government’s old listing mechanism has the greatest competition restrictive effects. But even using MTR’s prequalification methods, the results showed that all the contractors that won the main contracting contracts are the listed contractors and only three of them are not Group C contractors, which indicated that small contractors are not really in the same market with the large contractors.

For the Ten Mega Projects by MTR, the top four or five large contractors in this FYP are all sizable contractors with market shares around 20%, which hasn’t achieved substantial market power. But the moderately concentrated market with relatively high entry barriers is easier for the contractors to enter collusive agreements because they can obtain huge profits by cooperation with several familiar contractors without fearing other competitors entering the market due to the protection of entry barriers and once they cooperate, they will collectively obtain the substantial power which may be abused.

9.2 Suggestions to Improve Value for Money

Eliminating or reducing entry barriers can contribute to huge savings in procurement costs. The European Commission estimates that the elimination of trade barriers resulting from discriminatory and preferential procurement practices may bring about savings to the European economy of about 0.5% of EU GDP. (Bovis, 2007) It could be reasonably believed that the elimination of the second tier entry barriers can lower the concentration level among large contractors as well as save millions benefited from the lower prices and improved efficiency due to larger pool of competitors.

9.21 Suggestions for Listing Mechanism

The lists owned by the developers could be updated more frequently to include new developing contractors because familiar contractors knowing each other are more likely to have collusive agreements in private. Adjusting the list frequently can break the agreements. Once a new contractor is on the list, the bid-rigging or cover pricing will lose effects because the new entrant can use a low tendering price to win the job and the others forming the agreements will lose profits.
The unnecessary high demands in prequalification shall be eliminated to allow more competition in actual detailed assessment and the criteria in prequalification shall be reduced to the minimum acceptable standard that must be obtained. For the projects with great complexity, the prequalification process can emphasize on the track record of similar jobs but delete the requirements for innovation to allow more competitions.

For government listing mechanism, the listing requirements shall differ not only considering contract value but also taking contract nature and complexity into account. Only contract value cannot reflect what qualities and capabilities the contractor is required to have.

To seek for better feasible government contracting method, the U.S. federal government contracting system has been referred to. And it is found no listing or prequalification is set in the system. The government does require the past working experience and track records to be the supplement documents submitted together with the sample project price and schedule. Besides, the law including Federal Acquisition Regulation and Small Business Act protects the benefits of the small businesses. The law in the United States requires that 23% of all federal prime contract dollars be awarded to small businesses. If two or more small business are prepared to compete for a contract, and can meet the government’s requirements at a fair and reasonable price, the government will limit competition to only small businesses. The contracts set aside for the small contractors are only for the competition among small contractors, which guarantee the growth and development of small businesses.

<table>
<thead>
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<tbody>
<tr>
<td>1</td>
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</tr>
<tr>
<td>2</td>
<td>Solicitation Advertised Electronically</td>
</tr>
<tr>
<td>3</td>
<td>Solicitation Issued Electronically</td>
</tr>
<tr>
<td>4</td>
<td>Submit Bids/Proposals Electronically</td>
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<td>5</td>
<td>Bids/Proposals Evaluated</td>
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<td>6</td>
<td>oral presentations if required</td>
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<tr>
<td>7</td>
<td>Negotiations if required</td>
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<tr>
<td>8</td>
<td>Subcontracting Plan Final Approval (Large only, if required)</td>
</tr>
<tr>
<td>9</td>
<td>Award</td>
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<td>10</td>
<td>Debriefing</td>
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<tr>
<td>11</td>
<td>Performance &amp; Successful Completion</td>
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</table>

Figure 9.1 U.S. Federal Government Procurement Procedure

The procurement system in the U.S. has no such listing for contractors but it does need technical or financial documents in evaluation of all the tenders. The advantage of doing so is to allow the sufficient competition and make different requirements subject to the situation of different projects. The final decision will be more comprehensive by taking all the materials into consideration such as the technical proposals, the tendering price, the financial compliance and so on. Besides, the U.S. Federal Government protects the

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1 Small businesses means the businesses located in U.S, organized for profit, including affiliates is independently owned & operated, not dominant in field of operations in which it is bidding on Government contracts, and meets Small Business Administration (SBA) size standards included in solicitation. Small Business Association also protects the business of Small Woman business, Small disadvantaged Business and so on.

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development of small business by ensuring 23% of the overall contract value assigned to the small business. For the projects that two or more competent small business have prepared to bid for, the department will reduce the competitors to all small business. The U.S. government has the favourable policy for small contractors because the small business are on the disadvantaged positions compared with large contractors in resources, techniques or capitals they have and the favourable policy may deliver the rebalancing effect. Similar measures can be taken in Hong Kong because among all the public procurement contracts, most of them are of the value higher than 400 million, where only Group C contractors can bid for them. Only one or two contracts are of the value within the range for Group A or B, which worsen the two-tier concentration by awarding only one to two contracts to a fully competitive market with hundreds of small contractors while having considerable number of contracts of high values retained for a limited number of large contractors.

Other than that, the U.S. government determines the requirements in financial and technical compliance case by case and it is appreciated because this method give better chance of finding the most suitable contractor not only judging on the contract value but considering the whole situation of the project as well as considering all the documents handed in by the contractors not only financial report or track record but also the specific proposals and method statement. The only disadvantage of doing so is the trade off of efficiency in time and resources.

European Commission also has the directive for public procurement and has put great emphasis on the transparency. The recognized tendering methods include open tendering, selective tendering and negotiation. Selective tendering method is similar to the government’s listing mechanism and is the same as the MTR’s procurement method. However, if choosing selective tendering as the method, there are two rules to be followed.

1. Non-discriminatory criteria should be indicated which the contracting authorities may use when selecting competitors and means which economic operators may use to prove they have satisfied those criteria. The contracting authorities should be required, as soon as a contract is put out to competition, to indicate the selection criteria it will use and the level of specific competence it may or may not demand of the economic operators before admitting them to the procurement procedure.

2. Contract Award Notices (CAN) notifies the public about the award of a contract to a successful tender, including the price and the reason for the selection.

The difference between the European Commission selective tendering and MTR selective tendering is that the European Commission emphasizes more in presenting the non-discriminatory and selection criteria to the public including the level of specific competence to let the public have full understanding of the detailed pre-determined criteria in assessing the expression of interests to create transparency. MTR certainly reveals the several aspects it will assess in prequalification but it doesn’t inform the public the level of specific competence and specific selection criteria on the invitation to Expression of Interest.

The disclosure of the non-discriminatory and selection criteria has at least two advantages. First, it improves the efficiency by giving the level of specific competence so that the contractors won’t waste time in preparing the relevant documents for
prequalification if he finds himself not qualified through the selection criteria and it saves the assessment time for the employer. Second, it enhances the transparency and will make the selection in prequalification more objective based on the selection criteria published to the public. In the final award, the contracting authorities have to explain the reasons of this award, which may further contribute the improvement of transparency and competition.

In conclusion, after referring to the public procurement methods in both the U.S. and the European Commission, the suggestions have been made as follows:

1. The U.S. doesn’t set the step of prequalification while the EU set the prequalification criteria subject to different cases. Thus, it is suggested that the government shall not only consider contract value when determining the listing criteria as the barrier to take government contracts. The nature, complexity, coverage, risk of the contract shall all be taken into consideration in deciding the technical, financial and management selection criteria. It would be better if the government can use the specific selection criteria subject to each case in the prequalification stage instead of listing mechanism to choose qualified contractors. But if the efficiency must be ensured, the listing mechanism can continue to play in the procurement but more factors shall be considered in deciding the thresholds.

2. The U.S. set the evaluation of financial and technical compliance in the evaluation of tenders returned, and this method is the best method to find the most suitable contractor because in the tender evaluation stage, the information is much more comprehensive and complete than in the prequalification stage, which facilitate the contracting authorities to make a most rationale decision. Thus it is suggested that if keeping the listing mechanism, the thresholds shall be reduced to the minimum acceptable standard for the specific situation. For example, for the project of high value with very low technical difficulty but requiring huge prior input, the threshold for the track record could be lessened though the value of the contract may be over $400 million. The thresholds in prequalification shall be kept low to ensure sufficient competition in real tendering and to choose the best technical proposal or method statement rather than only relying on the financial or technical compliance.

3. Due to the obvious segregation between the competitiveness between the large contractors and small contractors and also the huge difference between the number of contractors only for Group C and the number of the contractors for Group A and B, certain protection policy shall be issued to protect the benefits and encourage the growth of small contractors. Small contractors have already been in the disadvantaged positions in terms of capital, technology or resources. In addition, they are not allowed to compete with the fewer number of Group C contractors but must compete with many small contractors for only one to two contracts due to the listing requirements. Thus, it can be learnt from the U.S. government to allow more contracts being retained particularly for small contractors, such as 20% of the overall value rather than only one to two contracts. Once the small contractors have become bigger, the competition in large contractors will be enhanced naturally.

4. On the contrary, several large contractors have in fact been protected by the listing mechanism from the threat of much more small contractors and the market has already been moderately concentrated. Other than lowering the thresholds stated
in the second point, the list of Group C contractors shall be revised and updated frequently to allow new comer and remove the inactive contractors who may haven’t taken any projects for several years. The more familiar the Group C contractors are to each other, the more likely the cartel conducts or collusive agreements may be made. Encourage other large contractors from the mainland China or Singapore or Australia to tender for the projects and lower the entry barriers and limitations of the foreign contractors’ tendering.
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Karen Dicks, (2012), “Hong Kong’s New Competition Ordinance”, Deacons


APPENDIX ONE
PILOT SCHEM INTERVIEW TRANSCRIPT
Interview Transcript
The Impact of Competition Ordinance on Construction Industry

Introduction:
This questionnaire is intended to find out the vulnerability of the construction industry to the first ever Competition Ordinance and the according resolutions.

Declaration:
All the identities involved in this interview shall be kept confidential. The whole interview and all of the results and answers are used for academic purposes only.

<table>
<thead>
<tr>
<th>First Conduct Rule</th>
<th>Vulnerability (Rate 1-5)</th>
<th>Examples in the industry</th>
</tr>
</thead>
<tbody>
<tr>
<td>Directly or indirectly fixing prices;</td>
<td>It depends on which sector that is concerned. If it is the sector of main contractors, the vulnerability should be 1. But for the sector of small construction contracts, the possibility of price fixing could be very high and could be a 5.</td>
<td>If there exists some agreement to uplift the prices together, the winner will reimburse the loser money but if the winner regret and refuse to pay, the loser can’t sue him for loss. There is no legal document or legal path to ensure the benefits.</td>
</tr>
<tr>
<td>Bid-rigging (collusive tendering);</td>
<td>It depends on which sector you are talking about. If talking about some small contracts such as fitting out, sometimes there really are behaviors of bid-rigging. But for large contracts, bid-rigging basically won’t happen because our industry is an extremely competitive market and the contract sum is very large so there is no incentive for a contractor to voluntarily give the opportunity of winning the project to his competitor. Even there is a reimbursement system, there is no legal path to claim for the reimbursement so the risk will be very high and contractors won’t tend to do this.</td>
<td>There are some bid-rigging behaviors in the bidding process for fitting out or maintenance projects.</td>
</tr>
<tr>
<td>Sharing Markets;</td>
<td>In the sectors of material suppliers or small contractors such as fitting out or specialists, it is likely that this kind of behavior will appear, and the rate could be 5. But for main contractors, the vulnerability is only 1.</td>
<td></td>
</tr>
<tr>
<td>Limiting or controlling production or investment;</td>
<td>Very rare in the industry in Hong Kong, and the rate is 1.</td>
<td></td>
</tr>
<tr>
<td>Activity</td>
<td>Description</td>
<td>Rate</td>
</tr>
<tr>
<td>--------------------------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
<td>------</td>
</tr>
<tr>
<td>Fixing trading conditions;</td>
<td>It depends on what trade conditions you are talking about. Because in our industry, it is very common to negotiate the specifications with the government or the client to make the technology more practicable. So HKCA will negotiate with the clients, mainly the government, how to vary the trade conditions. This kind of practice is likely to fall into the category of anti-competitive conduct and thus obviate the Competition Law. The rate is 5.</td>
<td>5</td>
</tr>
<tr>
<td>Joint purchasing or selling;</td>
<td>Joint purchasing is very rare in the construction industry. There is no reason for two independent firms to purchase the materials together from one supplier. Because it may lead to some problems such as when delivering the materials, which one of the joint purchasing firms should the materials be delivered to first. The rate is 1.</td>
<td>1</td>
</tr>
<tr>
<td>Sharing Information;</td>
<td>It is very rare in the industry. It would lead to the decrease of their competitiveness. And the rate is 1.</td>
<td>1</td>
</tr>
<tr>
<td>Exchanging price information;</td>
<td>This was a common practice years ago, but now this kind of behavior gradually disappeared. Because previously, the job must be assigned to the contractor who bid the lowest tender price, but nowadays, there is tender rating to assess the overall performance of the bidders depending on many factors not only the tender price but also the method statements, the technical proposal and so on. Price is no longer the sole determinant factor. So the vulnerability is 1.</td>
<td>1</td>
</tr>
<tr>
<td>Exchanging non-price information;</td>
<td>It is very rare in the industry. And the rate is 1.</td>
<td>1</td>
</tr>
<tr>
<td>Restricting Advertising;</td>
<td>Very rare in the construction industry.</td>
<td>1</td>
</tr>
<tr>
<td>Setting technical or design standards;</td>
<td>This is the practice that the HKCA would do all the times. When the government set the standards, it usually will give several quotations and performance specifications. For private clients, in most projects, the standard will be very specialized to form a “prescriptive” contract. In order to ensure the quality of the project, the client will require not only the good quality of the products and correct methodologies. It is possible that only a few firms can comply with the standards when the standards prescribed are very specialized. But in his opinion, this is the nature of the industry. And to what extent the competition can be restricted depends on what technology the client prescribes. But the situation can only last for a short time because of the high return and few competitors, new entrants will break the oligopolistic situation. The rate is 5.</td>
<td>For example, the client may prescribe a technical standard on the methods or process of doing construction works and request the contractor to follow the methods the client set to ensure the quality. For example, the client prescribed precasting as the only acceptable method for quality consideration, which may prevent some firms which have no knowledge of precasting from bidding and thus restrict the competition. Also, a lot of technology such as the technology concerning district pulling or incinerator is really restricted and limited among only several firms all over the world. Once the client prescribe such technology or want to do similar project which would use such technology, the competition must be restricted largely but this is very normal in construction industry.</td>
</tr>
<tr>
<td>Terms of membership and certification;</td>
<td>No such membership in Hong Kong. But the government has a grading system and a list to classify contractors into different categories in order that the contractors have the capabilities to do certain projects, which may create some barriers to entry. The rate is 1.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Exclusion for 1st Conduct Rule</th>
<th>Applicability (1 to 5)</th>
<th>Examples in the industry</th>
</tr>
</thead>
<tbody>
<tr>
<td>Promoting technical or economic progress;</td>
<td>5.</td>
<td>Fixing trade conditions; Setting technical or design standards</td>
</tr>
<tr>
<td>Complying with a legal requirement;</td>
<td>5.</td>
<td>Grading system or listing</td>
</tr>
</tbody>
</table>
Gov’s entrusted undertakings with the operation of services of general economic interest;  

| Merger: | 1. Basically no merger cases in construction industry related to the agreement which may obviate first conduct rule.  
1. The sum of most of the construction contract is larger than HKD $200M while the sum of some small purchasing contract could be smaller than HKD$200M. |

<table>
<thead>
<tr>
<th>Block Exemptions Orders (s1 of Schedule 1)</th>
<th>Comments (whether applicable and how to prepare?)</th>
</tr>
</thead>
</table>
| Vertical Agreements;                      | Not very clear about how to apply block exemption orders to the Commission.  
Not so sure about whether vertical agreement need the block exemption orders.  
progress. |
| Joint Venture;                            | Joint venture is a very common and ordinary practice in this industry because in many cases, a contractor is not capable of doing a project alone. Actually it enhances competition in the sense that if there is some rule that says the firm can only do the project alone and cannot do joint venture, the firms which are capable of handling a project worth 10 billion are very limited, but if joint venture allowed, there will be much more companies able to bid for it because more companies are capable of doing a project of 5 billion. Usually, joint venture will lead to the sharing of resources and technology to enhance the capability. Many large companies also do joint venture to further enhance their capabilities and make them more competitive although they may be capable of doing it alone.  
Any joint venture will lead to the side effect of restriction of competition in the sense that originally there are 10 firms to compete with each other while after joint venture, there may only be five. However, joint venture does enhance the product delivery. Sharing price information will reduce the competitiveness and thus the contractors won’t have such willingness to share prices with other competitors.  
It would be better that joint venture can apply for block exemption order because if it will obstruct the operation of construction industry if joint venture is prohibited. |

80
### S1 of Schedule 1: agreements enhancing overall economic efficiency

#### Abuse of market power

<table>
<thead>
<tr>
<th>Second Conduct Rule</th>
<th>Vulnerability (Rate 1-5)</th>
<th>Examples in the industry</th>
</tr>
</thead>
<tbody>
<tr>
<td>Predatory behavior towards competitors;</td>
<td>As for tying and bundling, this is a common practice for the industry. The rate is 5 for tying and bundling. It is less possible for contractors to reduce price to below the cost in order to exclude other existing competitors or defer the entry of potential competitors because it will endanger the survival of himself by doing so and this is too risky to try. It is 1 for predatory price.</td>
<td>When a firm is doing different business and selling different products, it may ask the purchasers to buy both products. For example, the purchaser wants to buy precast concrete, the supplier may ask him to buy the joint wall as well. But if this act is carried out, the firms in the industry must stop this behavior.</td>
</tr>
<tr>
<td>Limiting production, markets or technical development to the prejudice of consumers;</td>
<td>It is unlikely to happen in our industry because the entry barriers are very low in Hong Kong. The rate is 1.</td>
<td></td>
</tr>
</tbody>
</table>

#### A substantial degree of market power

<table>
<thead>
<tr>
<th>Second Conduct Rule</th>
<th>Vulnerability (Rate 1-5)</th>
<th>Examples in the industry</th>
</tr>
</thead>
<tbody>
<tr>
<td>The market share of the undertaking;</td>
<td>This is rare on the level of main contractors because basically it is extremely successful for a main contractor to have a market share of 20%. The rate for Main Contractors sector is 1. But a large market share is common for material supplier. And it is also very possible for specialists to have a large market share or become dominant player. Rate for material suppliers and specialists is 5.</td>
<td>The precast products of our company has had a market share of 50%. Our company’s market shares for the housing projects has occupied 25%.</td>
</tr>
<tr>
<td>The undertaking’s power to make pricing and other decisions;</td>
<td>This is extremely unlikely because the entry barriers are too low to take the risk of making price. The rate is 1.</td>
<td>If I set the price very high, there will be a lot of new entrants doing the business because of the high profits.</td>
</tr>
<tr>
<td>Any barriers to entry to competitors into the relevant market;</td>
<td>Relatively low. The sunk cost is relatively low and there is basically no limit access to input or output. The rate is 2.</td>
<td>Input materials are very common such as cement, sand and steel.</td>
</tr>
<tr>
<td>Any other relevant matters specified in the guidelines</td>
<td>Buyers’ bargaining power is very strong, and the rate is 5.</td>
<td></td>
</tr>
</tbody>
</table>
issued under section 35 for the purpose of this paragraph;

<table>
<thead>
<tr>
<th>Exclusion for 2nd Conduct Rule</th>
<th>Suitability (√ × OR ☑)</th>
<th>Examples in the industry</th>
</tr>
</thead>
<tbody>
<tr>
<td>Complying with a legal requirement;</td>
<td>No.</td>
<td></td>
</tr>
<tr>
<td>Gov’ts entrusted undertakings with the operation of services of general economic interest;</td>
<td>yes</td>
<td>ISO 9000</td>
</tr>
<tr>
<td>Mergers;</td>
<td>no</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Issues for 2nd conduct rule</th>
<th>Comments (What are the possible impacts?)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Listing as barrier of entry;</td>
<td>No impact.</td>
</tr>
<tr>
<td></td>
<td>Listing won’t be prohibited. Listing is to protect the government as the client.</td>
</tr>
<tr>
<td></td>
<td>Some clients will have a list of RGBC from the Building Department but hundreds of contractors are on the list of RGBC.</td>
</tr>
</tbody>
</table>

Others

Q1: With reference to the innovations of your company, which innovations are driven by competition? (such as precast concrete products or software products)

   Definitely yes. The majority of my innovations are driven by competition because I want to make my site more competitive, the construction speed of my company faster, the construction quality of my company better and reduce the costs.

Q2: From the experience of your company, how does competition drive the innovation?

   Competition is very fierce in this industry and I discovered that the market was shifting. The salaries for workers were becoming higher and higher, so I thought about using more system construction, which means using more machines to substitute workers to lower the cost and speed up the process. And I found that using precast concrete can achieve these aims. Making precast concrete can reduce the workers employed, improve product quality, reduce the costs and get more projects. For example, before we use precast products, when we do harmony block, the process of making beams is very complicated consisting of many steps and time-exhausting. But after we use precast products, we just need to put the precast beam down to the site and thus time and the number of workers required are reduced greatly. Especially if there are system constructions, the clients will investigate how the work could be done. In this situation, if our construction team does the works well in the investigation such as the quality is better and the number workers can be reduced, our company can be more competitive.

   I did software innovation because I wanted to enhance the company’s communications, documentation and access to historical data to improve the circulation system, which will make the projects running more smoothly and reduce possible errors. Finding materials or information becomes much faster and more convenient. Competition plays a major role in stimulating our company to innovate and improve the communication to reduce possible errors. The major
reason I did innovation is that I wanted to become more competitive.

Q3: In general, what role does Competition Law play to drive innovation? Limit innovation.

Because the reason why people innovate is to limit competition and increase entry barriers. People innovate to get economic benefits, at least for a period of time. After competition law being carried out, it may prohibit the technical standard set to use the innovation if there is only one firm can do it. This is because the technical standard set will largely restrict the competition and may obviate first conduct rule. If only when several firms can all satisfy the standard at the same time can the technical standard be set, no firm is willing to do the innovation because there is no first mover advantage. They have to wait until other competitors have mastered the new technology, otherwise it may obviate the Competition Law. So innovation will be decreased because there will be no innovation benefits.

The intention of Competition Law is to increase the competition, which has a side effect of decreasing innovation. Because innovators just want to increase entry barriers through technology. But now if, Competition Law does not allow creating the technical entry barrier, innovators will stop innovate.

For example, I am now innovating on one product to make the quality better, but this product will be more expensive. As a client, there is no benefit for me to purchasing the new product. So actually what competition can do for innovation is to encourage the innovation in reducing cost, not improving quality. To solve this problem, the government now is using the system that if there is innovation in the tender, there will be extra bonus for the tender to encourage innovation.

But still in my opinion, Competition Law will decrease innovation if there is no other policy to encourage innovation.

APPENDIX TWO
VERIFICATION STAGE QUESTIONNAIRE
FOR Developer A
Interview Transcript II
Questionnaire

Disclaimer:
This questionnaire is only for the academic use.

1. For major construction works, Does your company use open tendering or selective tendering?

   The procurement process adopted by us for major construction works is normally selective tendering* with compliance to the World Trade Organization Agreement on Government Procurement. Our selective tendering process is systematically broken down into a series of stages (with approval at each stage by various approving committees/panels mainly according to the value of the contract):

   a. Open Pre-qualification (via Expression of Interest (EoI) where interested parties can access our public website and make “EoI” submission accordingly;)

   b. shortlisting of tenderers (generally 5 to 8 nos) with a set of pre-determined, prequalification criteria for tender submissions corresponding to the specific contract;

   c. upon tenders return (from (b)) and completion of the first stage technical and financial compliance tender assessment, shortlisting of tenderers for detailed assessment;

   d. recommendation and award

   Throughout the whole procurement process and with strictly compliance of confidentiality by participating members, various briefing sessions, workshops, interviews, meetings will be convened depending on the complexity of the contract.

   [* please note, “open tendering” means that any interested party may submit a tender without the need for prequalification.]

2. If the selective tendering is used, does your company maintain a list of contractors like the HKSAR government?

   For major civil and E&M contracts, we generally adopt the procurement process
mentioned in (1) above. For work of relative minor nature (e.g. ground investigation) or on-going maintenance nature, we do have a Permanent List of “qualified contractors / suppliers” which have been prequalified as suitable tenderers in various works categories and such lists will be validated / updated regularly.

3. Does your company accept tender or expression of interest from a contractor not on the government’s list?

Yes. we prepare our own tender list specifically for each contract, and the objective of our procurement process is to appoint a suitable contractor in view of his competence and financial competitiveness to suit the nature and complexity of individual contract through the process mentioned in (1) above.

4. Do you have any criteria for the contractors to be on the list? Financial? Technical? Innovative requirements?

We consider all these factors for shortlisting of tenderers. For financial evaluation, prior to shortlisting, we scrutinize the potential tenderer’s audited financial accounts for shortlisting, and the need for additional guarantee (e.g. parent company guarantee) in view of the nature of individual contract and the background of the potential tenderer.

Similarly for technical evaluation – potential tenderer’s understandings of the contract scope, challenges, constraints and his responses (including innovation ideas) to address these issues will be thoroughly examined.

5. How often are the lists of contractors revised?

Generally we do not adopt a “permanent list” of contractors for our major construction contracts procurement; we prepare different list of tenderers to suit different contracts through the prequalification process as mentioned in (1) above; effectively our tender list for a particular contract is “real-time” one.

7. Under what conditions, would your company require prequalification?

We generally adopts prequalification as an integral part of the procurement process for our construction contracts. As mentioned in (2) above, for work of relative minor nature (e.g. ground investigation) or on-going maintenance nature, we will procure from the Permanent List based on the relevant selection criteria and principle of rotation.

8. Have your company invited contractors without going through a prequalification stage to bid for a particular job?

Yes but mainly restricted to work of minor nature (e.g. ground investigation) or repetition of similar services— see (2) and (6) above.

9. What are the major differences in between your company listing criteria as compared with those of HKSAR government?
As an overview both the HKSAR Government and this company adopt similar shortlisting criteria by assessing the technical, financial and management capabilities of the potential candidates. The actual implementation of such procurement process varies according to the nature, scope and complexity of the contract being commissioned by the Government and us. See (1) for our shortlisting criteria.

10. For tender assessment, what factors are considered?

We review the (a) technical and (b) financial submissions independently in confidential manner by separate designated assessment teams for each contract:

a. Technically – the technical considerations vary according to different contract but predominantly consist of tenderers’ technically capability, previous experience on work of similar nature, project management team / resources, detailed method statements for critical elements, construction management plan, risk management plan, design, programme, safety, environment, quality assurance, partnering approach etc. The assessments will be consolidated in accordance with a predetermined scoring matrix by different disciplines within the technical assessment team.

b. Financially – examines the overall sufficiency of tender price, contractual compliance (e.g. any tender qualification), tender rates, front-loading pricing, net present value (NPV) analysis, arithmetically error (if any) by the financial assessment team.

11. What are the weightings of the factors?

Generally the weightings vary to suit nature of each contract.

12. Is there any special requirement for the Ten Mega Projects in Procurement?

Out of these 10 mega projects mentioned in the government policy address, we are responsible for the railway projects (e.g. Shatin to Central Link and Express Rail Link) which are currently at different stages of the construction phase. The procurement processes are as those mentioned in (1) above. For other projects not led by us, it is not appropriate for us to comment on their procurement processes / requirements.

13. How does your company enhance competition in procurement?

Not just to enhance competition but also for the healthy growth of the construction industry in Hong Kong, we strongly encourage new entrants from China and overseas to tender for our contracts.

During our prequalification process, other than posting the Express of Interest (EoI) information on our publicly accessible website, we inform the Hong Kong Construction Association (HKCA) (so as to capture their members’ attention of our procurement activities) as well as non-HKCA members through our long history of
involvement in the construction industry.

To further enhance new entrants for our contracts, we also inform the Department of the Liaison Office of the Central People’s Government in HK SAR (中央人民政府駐香港特別行政區聯絡辦公室) as well as other governments’ local representatives in Hong Kong (like Chamber of Commerce, Trade Commission, Consulate etc.) such that potential candidates from outside Hong Kong are being notified.
Appendix Questionnaire
Follow-up Questions for Developer A

Responses to the following questions relate mainly to your major civil engineering and E&M works.

1. **To shortlist tenderers (5-8nos) from the pool of interested parties, what are the pre-determined prequalification criteria?**

   When the tenderer apply for prequalification in response to the advertisement in our website for a specific major construction work, an information brochure and structured prequalification questionnaire will be issued to each applicant for submission to be returned before a specified closing date. The set of questionnaires cover mainly two categories of questions: (a) financial capabilities and (b) technical skills and relevant experience.

   Each applicant will be scored according to a pre-determined marking scheme based on his responses to the questionnaires by various disciplines within our company including construction, safety, programme, design, environmental, safety, quality assurance, etc. The criteria mainly contain the following:

   (1) Company's Management Structure / Corporate Relations;
   (2) Project Experience up to recent 10 years;
   (3) Resources including staff, labour and sub-contractors;
   (4) Specific technical skills / experience;
   (5) Project management skill and partnering knowledge;
   (6) Company's Safety policy, quality management, environmental management, risk management, system assurance, ethical code of conduct and convictions and Corporate social responsibility; and
   (7) Company's financial eligibility.

   The consolidated scores of each candidate will then be discussed and reviewed by a separate “procurement team members” before a recommendation of the shortlisted tenderers (5 to 8 nos depending on the nature and scope of the
contract) being recommended for approval by appropriate authority within our company.

2. What’s the difference between the criteria for prequalification criteria, the first stage technical and finance compliance tender assessment and the detailed assessment?

The criteria for all the stages of assessment are all based on technical and financial competences.

At pre-qualification stage, only preliminary information (about scope, challenges associated with the works, contract duration) is available, the assessment criteria at this stage can only be based on Contractor’s submission with this preliminary information.

At tender stage, when the fully designed drawings, specifications and pricing documents are available, the shortlisted tenderers are able to submit a formal offer / tender with detailed pricing, method of working, programme, designated project team etc. to fully address all the technical and financial requirements stated in the tender documents for their tender submissions.

From a technical perspective, if a contract with critical challenge (for example) in (a) working along an existing railway, (b) underpinning existing foundation with adjacent building and (c) complex “temporary traffic management system” (TTMS – i.e. various existing traffic / road diversions):

Upon return of tender submissions, the assessment criteria for the first stage technical compliance assessment will be commenced by our technical team to see whether these submissions address all the issues laid down in the tender documents (e.g. satisfactory and fully address / comply with (a) to (c) in the above example). Generally the two tenderers who are technical compliant (i.e. technically capable and competent to complete the work if being awarded the contract) and scored the highest technical marks will be recommended for detailed assessment.

At detailed assessment, the two shortlisted tenderers’ submissions will be scrutinized in more specific details about their method of working, programme practicability, specific project team structure, plant and resources level (in particular for critical areas, like (a) to (c) in the example above);

At both first and detailed stages of tender assessments, various workshops / meetings will be held with the tenderers and/or various technical team members of our company internally to ensure the tenders are being examined on the same basis.

Independent from the technical assessment, commercial team of our company will review the submitted pricing documents (bills of quantities) to check for arithmetical correctness, unit rate / pricing reasonableness, cashflow / Net Present Value (NPV) analysis, front-loading issue etc. Further, any
requirements on performance bond, parent company guarantee etc will be reviewed / clarified with the tenderers.

3. For financial evaluation, does your company require the sums of working capital? What is the general requirement on the working capital? (Or you could use the following table to list the general range of the financial requirements.)

At prequalification stage, we will seek potential candidates to submit details of their company information including:

- Company’s ownership (e.g. parent / holding company) information
- Financial audited accounts (generally for the previous 3 years)
- Maximum and Minimum value of contract that the potential candidate can undertake
- Contract Commitments – previous, current and future
- Maximum amount of performance bond from the potential candidate's banker can provide

After examining the submission for the above information, we will conclude the financial eligibility of each candidate and whether or not parent company guarantee is required.

4. For technical evaluation, does your company have requirements on the contract values for the tenderers’ previous projects or the number of the similar contracts completed? (Or you could use the following table to list the general range of the financial requirements.)

Having considered the financial eligibility of the potential candidate, the technical evaluation will focus on the technical competences (project team’s management structure, method of working, proposed plant and resources, environmental and safety system, partnering approach etc). These technical submissions from the tenderers will be evaluated against the relevancy to the specific contract under examination.

**Weighting**

1. Is there any typical pattern for the weighting of the factors? What is the most common and general pre-determined scoring matrix for major projects?

The scoring system adopted by us for major construction contracts generally score each potential candidate according to his financial and technical competences separately.

There is no standard scoring matrix adopted by us but rather a tailor-made scoring matrix will be formulated by the project team to suit individual contract (with approval from the appropriate authority within our company regarding these assessment criteria). For instance, a particular contract demands strong expertise on “work along / within existing railway”, this area will attract higher weighting in the scoring matrix. Similarly for contract “working next to an existing building /
structure", safety and settlement impact on the existing building / structure will be of paramount importance during the construction stage, hence the potential contractor’s experience and expertise in addressing these challenges will be scored accordingly to reflect the criticality of this area.

Inclusion of new contractors
1. Any example of inclusion of a “new” contractor for your project?

2. If yes, what 'extra' requirement shall be obtained from the “new” inclusion?

Our company is constantly seeking to expand the list of potential contractors for our contracts and we follow the World Trade Organisaion Agreement on Government Procurement.

During our prequalification process, other than posting the Express of Interest (EoI) information on our publicly accessible website, we inform the Hong Kong Construction Association (HKCA) (so as to capture their members’ attention of our procurement activities) as well as non-HKCA members through our long history of involvement in the construction industry.

To further enhance new entrants for our contracts, we also inform the Department of the Liaison Office of the Central People’s Government in HK SAR (中央人民政府駐香港特別行政區聯絡辦公室) as well as other governments’ local representatives in Hong Kong (like Chamber of Commerce, Trade Commission, Consulate etc.) such that potential candidates from outside Hong Kong are being notified.

There is no specific “extra” requirement for new entrants. Any candidate being considered for tendering our major construction works will go through the same selection process (general from prequalification, shortlisting, tendering and contract award). All the potential candidates will be reviewed, examined and shortlisted based on their technical and financial competences relevant to the contracts under consideration; and these procurement processes apply to all the potential