



Report on study into aspects of the market for residential building renovation and maintenance



May 2016

1. The market for residential building renovation and maintenance is an important market for the people of Hong Kong. Building renovation and maintenance costs are often a major expense for ordinary home owners¹, so that outcomes in this market have a significant impact on the family lives and standards of living of many ordinary people. Moreover, a wide variety of sources have expressed deep concern that there is widespread collusive activity in tenders for renovation and maintenance projects, to the detriment of home owners who must pay for the associated costs out of their savings. In view of these concerns, and to enable the Competition Commission to understand how this complex market operates so as to inform its future enforcement and advocacy efforts, the Commission undertook a study of certain aspects of the market for residential building renovation and maintenance since the spring of 2015. This report outlines the results of the Commission's examination of certain activities in this market.

The Commission's general purpose and approach in conducting market studies

2. The Commission's functions include "to conduct market studies into matters affecting competition in markets in Hong Kong" and "to advise the Government on competition matters in Hong Kong and outside Hong Kong".²
3. The Commission's market study function provides the Commission with the opportunity to assess whether competition in a market is working effectively. This is particularly relevant where it is desirable to focus on the functioning of the market as a whole or on features of a market in more general terms rather than on a single aspect of it or the conduct of particular firms within it. Market studies may examine any competition problem and may identify the market features causing the problem. A wide range of information may be studied and analysed during the course of a market study. Economic analysis techniques may be used to further identify issues. The use of "screening" techniques applied during this particular study is described in this report.
4. The main objective of a market study is to examine if competition within a market is working well or can be improved; it does not seek to establish general rules and obligations for firms. The Commission can look at the conduct of firms as it relates to the functioning of competition in the market generally, and it can also look for other causes of insufficient competition such as structural aspects of the market (including barriers to entry and expansion) or the conduct of customers. The purpose of a market study is not necessarily to look for contraventions of the Competition Ordinance, and subjects for a market study are not confined to issues that could be contraventions.

¹ We would note that tenants will likely be affected in a similar way to home owners, because higher maintenance and renovation costs will likely be passed on to them to some extent.

² Competition Ordinance, section 130.

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5. Two things should be noted about the Commission's study in this case. Firstly, and as a general point, the Commission does not have compulsory information gathering powers in conducting market studies unlike in the case of investigations of possible contraventions of the Competition Ordinance. Secondly, this market study relates to activities that occurred before the full commencement of the Competition Ordinance in any event. Thus, in contrast with market studies that the Commission might conduct in the future, the conduct studied would not likely constitute a contravention of the competition rules because they were not yet in force.
 6. If the Commission identifies that there are systematic problems of insufficient competition in a market, it can take a number of steps. For instance, if the Commission identifies that there is problematic conduct potentially falling foul of the Competition Ordinance by a number of firms in the market, it may identify that sector as meriting priority in enforcement case selection. Additionally, if the Commission identifies that there is a structural competition deficit within the market that may be solved through Government policies or action, it may make appropriate recommendations to the Government in accordance with its government advisory function. The Commission may also consider whether education of market participants would assist in resolving the problems identified.

Potential competition issues identified in the market for residential building renovation and maintenance

7. The Commission undertook an examination of a segment of the market for residential building renovation and maintenance related to the common areas of residential buildings as it operated just prior to the Competition Ordinance coming into effect. To do this, the Commission sought information from a range of stakeholders and market participants. In particular, the Commission was greatly assisted in its understanding of the market by the Urban Renewal Authority (the URA) and the Hong Kong Housing Society (the HKHS), who provided the Commission with historical information on tenders for projects.
8. The appointment of firms to undertake building renovation and maintenance work for home owners is usually done in a two-stage process. Commonly, the home owners first appoint a consultant to advise them on the type of work that needs to be done and to oversee a tender process for the appointment of a contractor. That firm (that is, the consultant) must include an authorised person registered under the Buildings Ordinance (typically a registered architect, engineer, or surveyor). Second, the contractor – who will undertake the physical renovation and maintenance construction work – is appointed by way of a tender overseen by the consultant.

9. The Commission's examination of the market in this case indicated that different types of bid-manipulation practices appear to be of particular concern in this two stage process. One type of bid-manipulation practice occurs where competing contractors engage in bid-rigging cartel conduct or other collusive behaviour intended to influence the outcome of the tender for their services to their favour, typically resulting in an inflated contract price compared to a more competitive level. The consequence of the higher price is that the consumers of the contractors' services, that is, the home owners who have to pay for the building work, pay more because of the collusive practice.
10. A second type of bid-manipulation practice (which may accompany or facilitate the conduct described in the preceding paragraph) occurs where a consultant and a contractor conspire with each other so that the particular consultant wins the bid to oversee the tender for the physical works (sometimes by putting in an extremely low bid for the consulting services), and then organises for its allied contractor to win the bid for the renovation work at an inflated price. Again, the ordinary home owner pays more because of this bid-manipulation practice.
11. These two practices are very likely not the only conduct engaged in for the purpose of bid-manipulation in this market. The Commission also notes that both practices – potentially in conjunction with other conduct – may be used in combination as part of a broader bid-manipulation scheme. The extent to which specific instances of bid-manipulation could potentially contravene the Competition Ordinance depends on the facts of each case.
12. The Commission received substantial anecdotal and other market intelligence suggesting that bid-manipulation practices may have taken place regularly in Hong Kong in the recent past in relation to the market examined, to the detriment of Hong Kong consumers. The Commission therefore applied screening techniques to analyse the tender records of past actual projects. As explained in more detail below, screening can help competition authorities detect suspicious conduct and decide where to look more closely for evidence of competition law breaches. The screening carried out by the Commission can provide an indication of whether patterns in the data would be consistent with the widely suspected bid-manipulation practices. It also indicates whether the Commission would likely decide to investigate some of the observed patterns if they were encountered today using a more recent set of tender data.

The Commission has undertaken detailed quantitative “screening” analysis on a wide range of projects

13. The Commission examined the past tender results of a wide range of specific building maintenance projects which the URA and HKHS shared with the Commission on a confidential basis. Based on its analysis of these tender records, the Commission found patterns that would be consistent with the above mentioned bid-manipulation practices widely suspected in the building maintenance and renovation market.

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14. The projects examined were those subsidised under the Operation Building Bright (OBB) scheme, a government subsidy scheme launched in 2009. OBB consisted of two rounds of funding with a total allocation of up to \$3.5 billion. Buildings benefiting from the scheme are of a certain vintage (30 year-old or over). Geographically, the scheme covers Hong Kong Island, Kowloon and the New Territories and involves building works in the common area of buildings, typical of the works undertaken in most building renovation and maintenance projects initiated by owners in Hong Kong. Information on the tenders concerned was collected by the URA and the HKHS during the course of the scheme. The Commission analysed the results of around two hundred tenders for the appointment of consultants to plan and oversee OBB renovation projects, and of around five hundred tenders for the appointment of contractors to carry out the renovation works.
 15. The Commission examined these tender records by using a method known as screening. Originally proposed by academic economists, screening has been used by competition agencies around the world to facilitate cartel detection. Cartels cause significant economic harm and fighting them is a priority for competition authorities. However, cartels operate in secret and they are hard to detect. Leniency programmes that offer cartelists immunity or reductions in fines in exchange for information on cartel conduct have been used by many competition authorities with great success. Screens represent an additional tool competition authorities can use to uncover cartel behaviour and can – as such – complement leniency programmes and other detection techniques.

Background information about screening

16. Generally, screens can be classified into two types – structural and behavioural.³ Structural screens are based on the structural characteristics of a market (e.g. the number of competitors and product homogeneity) and aim to identify markets that are more susceptible to collusion. Such structural screens can provide useful guidance to competition authorities in deciding which markets within the economy to prioritise when enforcing cartel prohibitions.
17. Behavioural screens, on the other hand, look for behaviour on the part of market participants within a specific market that appears more likely to be consistent with collusion rather than competition.⁴ These screens can again be classified broadly into two categories: (1) screens that look for patterns that are very unlikely to occur under competition and (2) screens that look for patterns that appear inconsistent with some benchmark (for example, a market in another region or some measure of costs). In both cases the screen flags behaviour/patterns that appear(s) inconsistent with competition, indicating that the market concerned may be affected by some form of collusion. The Commission has applied both types of behavioural screens in this market study. A brief review of screens applied elsewhere in the world below illustrates how such screens can work in practice.

³ OECD Directorate for Financial and Enterprise Affairs – Competition Committee (2014), Ex officio cartel investigations and the use of screens to detect cartels, Background Note by the Secretariat, p.225. Available at <http://www.oecd.org/daf/competition/exofficio-cartel-investigation-2013.pdf>

⁴ Ibid, p.20

18. A prominent example internationally is the uncovering of collusive conduct in the setting of the LIBOR benchmark interest rate in the financial market through the use of screening techniques.⁵ LIBOR is an important benchmark interest rate – that is, a price of borrowing money – used widely in financial markets. It was set daily in London by the British Bankers Association based on individual quotes on the costs of borrowing money from a number of banks. Journalists initially flagged suspicious patterns in the LIBOR benchmark. Academics then followed up with more detailed screening analysis. One of the results of this screening was that many banks had submitted identical quotes for extended periods of time. This is a pattern that seems highly unlikely if the banks made their decisions independently of each other without any coordination. Subsequent investigations by competition authorities and financial regulators in several jurisdictions led to substantial penalties.
19. Screens have also been used to detect collusive behaviour in the construction sector. For example, the screening of highway paving project tenders in New York State in the United States suggested that certain known cartelists who had previously participated in bid-rigging rings elsewhere in New York State also rigged the tenders under study.⁶ Specifically, the authors of the study looked into the relationship between the level and ranking of bids and the underlying costs of the bidders. They found that the level and ranking of bids submitted by the non-cartel firms could be explained by relevant cost indicators while this was not the case for the bids submitted by the cartelists. The authors interpreted these results as an indicator of cover bidding – where bidders agree to submit bids with higher prices or less attractive (or unacceptable) terms as compared with the bid of the designated winner – by those parties with a prior history of cartel conduct.

The results of the Commission's use of screening techniques

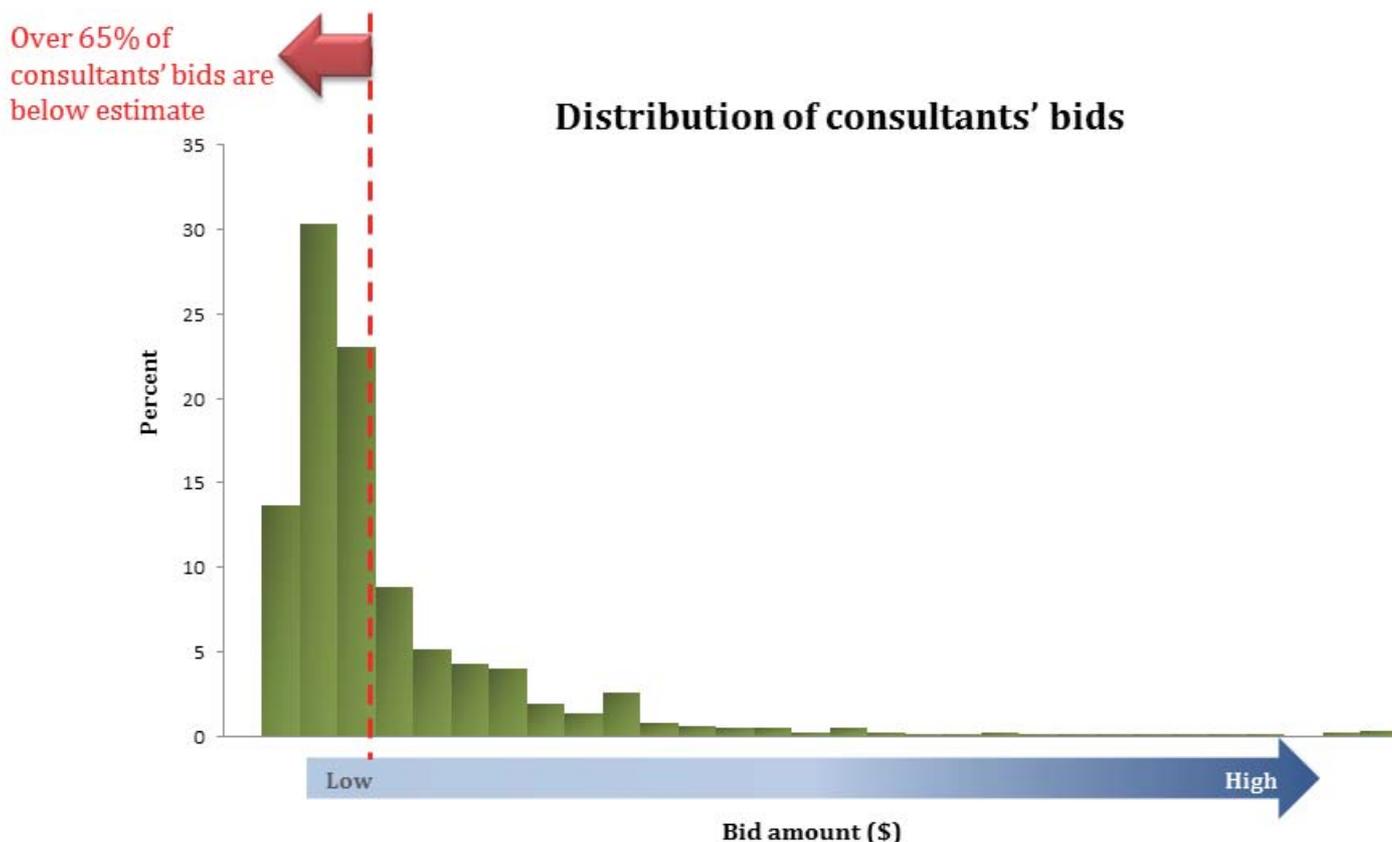
20. The Commission applied a number of different and complementary screening techniques to the tender records it had obtained. One screen the Commission applied focused on tender participation and tender success. The motivation for this screen flows directly from the forms of bid-manipulation widely suspected in this market and outlined above: if certain groups of bidders conspire to influence tender outcomes in their favour, one might expect those groups of bidders to participate in the same tenders frequently. Furthermore, where such groups do participate in the same tender, group members' chances of winning the tender should also increase. The Commission screened the tender data for such patterns.
21. More specifically, the Commission first looked for indications of consultants and/or contractors participating in the same tenders more often than would be expected if they were making their decisions to participate independently of each other. It is, of course, difficult to decide in practice which level of participation in the same tenders is consistent with independent decision making and which level is not.

⁵ See, for example, Abrantes-Metz, Rosa M., Michael Kraten, Albert D. Metz and Gim S. Seow (2012), LIBOR Manipulation?, *Journal of Banking and Finance*, 36(1), pp. 136-150.

⁶ Porter, Robert H. and Zona, J. Douglas (1993), Detection of Bid Rigging in Procurement Auctions, *Journal of Political Economy*, 101(3), pp. 518-538.

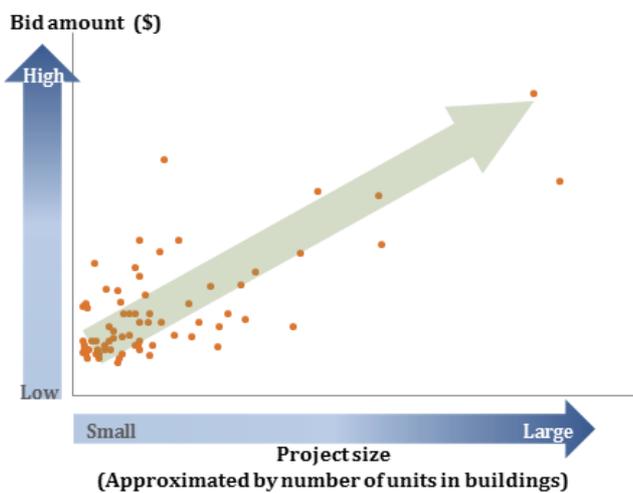
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22. The Commission therefore looked at different measures of participation. One measure evaluated participation from a statistical perspective. The Commission first asked: how often would we expect to see consultant/contractor and contractor/contractor pairs in the same tender if participating together occurred at random (or put differently, if participation were statistically independent)? The Commission then compared this benchmark level of anticipated pairs with actual pairs in the data. It labelled pairs that appeared too frequently as being possibly associated.⁷ A second measure of groups of contractors started from actual participation in tenders. The measure looked for groups of contractors where each group member (1) participated with some frequency in tenders in general and (2) satisfied some threshold of participation in other group members' tenders. Again, the Commission considered groups of contractors that fulfilled these requirements as being possibly associated. As a result of these analyses, the Commission identified possible associations in the data between certain consultants and contractors as well as between certain contractors.
 23. The Commission then went on to check whether the presence of an association between bidders – as indicated by the above screening analysis – increased the prospect of winning a tender. The result is that it did. Contractors were more likely to win a tender where our screening indicated they were associated with the consultant organising the tender. Similarly, contractors were more likely to win a tender the higher the number of associated contractors – again, as indicated by the above screening analysis – participating in the tender.
 24. Overall, these results suggest that participation patterns in the tender data appear consistent with the widely alleged bid-manipulation practices described at the outset of this report. While the results do not prove that such practices were present, they would – if encountered today using more recent data – likely lead the Commission to investigate particular tenders.
 25. In a separate analysis, the Commission screened for bid amounts that appear not to be reflective of the costs of providing the underlying goods and services. The motivation for the screen is that in a competitive environment there should typically be a relationship between the cost of providing the goods and services and the bid submitted: the higher the costs underlying the bid, the higher the level of the bid. The Commission's analyses indicate that bidding patterns of consultants often appear out of line with the underlying costs. There are two ways by which the Commission arrived at this conclusion.
 26. In the first part of the analysis, the Commission compared the values of consultants' bids with an estimate obtained from an industry expert of the minimum costs of providing the services associated with even the most basic consulting project. The figure below illustrates this analysis.

⁷ The word "associated" as used in this paragraph is not intended to imply any legal association in a corporate sense. The word merely refers to the fact that particular parties appear together in particular tenders more often than might be anticipated if they made their decisions completely independently.

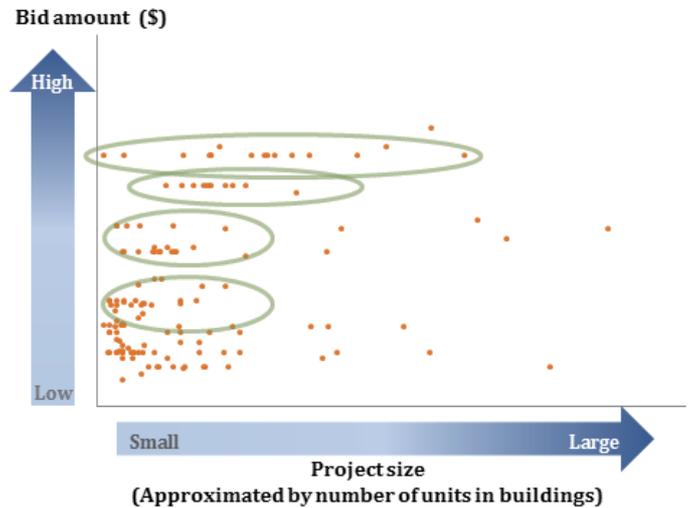


27. The figure shows the distribution of consultants' bids with respect to their value (the bid amount). The red line in the figure indicates the minimum estimate of costs associated with even the most basic consultancy project as provided by an industry expert. More than 65% of the bids submitted by consultants fall below that estimate. This may suggest that consultants' bids are suspiciously low in many projects. One possible interpretation would be that consultants bid aggressively low in order to win a project and subsequently benefit from awarding renovation work to particular contractors.
28. In the second part of the screening analysis of the costs underlying bids, the Commission analysed whether consultants' bids increased with the size of a project. While genuine bids should show a relationship between project size and bid value, this need not necessarily be the case for cover bids that are not intended to win a project. The results indicate that some consultants' bids did vary in line with project size, but other consultants' bids did not (or at least much less). The figure below illustrates the result.

Correlation between cost and bid amount



Weaker correlation between cost and bid amount



29. The figure shows the relationship between bid amounts and project size (approximated by the number of units in a building) for two consultants. The consultant on the left submitted bids that tend to increase with project size. This is a pattern one would expect under competition: the larger the project, the higher the associated costs and the higher the value of the bid. The consultant on the right, on the other hand, submitted bids that show no clear relationship with the size of the project (and often take on the same value for projects of very different size). One possible interpretation for this latter pattern is that certain consultants may have submitted bids that were unrelated to their costs in certain tenders.
30. Overall the results of the Commission’s screening analyses would be consistent with the widely alleged bid-manipulation practices outlined above having been present to an extent. They are, however, no proof of such activities having actually taken place; our screening analyses are neither suited nor intended to conclusively prove contraventions. The purpose of screens is primarily to identify patterns that are suspicious in order to focus an investigation and decide where to look more closely for additional evidence. As a consequence, the Commission has neither concluded that any specific practices led to the patterns observed during the study, nor that the conduct underlying these patterns would have contravened the Competition Ordinance had it been in full effect at the relevant time. Nevertheless, if encountered today, the results would likely lead the Commission to initiate further investigations into certain aspects of this market.

The Commission will investigate future bid-rigging collusion that is now illegal under the Competition Ordinance

31. The Competition Ordinance came into full effect on 14 December 2015. Under the First Conduct Rule in the Ordinance, businesses must not make, give effect to or facilitate agreements that have the object or effect of preventing, restricting or distorting competition in Hong Kong. If the Commission were to encounter similar patterns detected in the context of this study today, it would likely raise concerns that there may be conduct underlying them that could contravene the First Conduct Rule and warrant further investigation. If such investigations eventually confirmed suspected contraventions of the First Conduct Rule, the conduct could be brought to the Competition Tribunal for the imposition of penalties. In particular, where there is evidence of collusion on bids between competing contractors as part of a bid-rigging cartel, the practices may constitute serious anti-competitive conduct as defined by the Competition Ordinance and may attract very serious penalties.
32. Moreover, if a consultant conspires with, aids or is in any way knowingly concerned in a bid-rigging cartel, the consultant is also exposed to pecuniary penalties under the Competition Ordinance. Market participants are advised to bid for projects on a competitive basis and to avoid collusive practices or conspiring with others in support of such practices now that the Competition Ordinance is in full force.
33. The methods used in the Commission's study of the building renovation and maintenance sector have potential implications for future confidential investigations and law enforcement actions to be undertaken by the Commission. As a result, the Commission proposes to limit the amount of detail it provides on the methods employed in this case.
34. The Commission's enforcement and advocacy activities will be informed by the results of the screening exercises in this study, as it attempts to uncover bid-rigging and other contraventions of the Competition Ordinance now that the law is in full force. To the extent that bid-rigging cartels, in particular, can be prevented, Hong Kong home owners and tax payers will benefit from more competitive contract prices.
35. Home owners and other members of the public are encouraged to be alert to the prospect of bid manipulation and are encouraged to come forward and report any specific information to the Commission and other authorities for further examination. The Commission will be issuing educational materials about bid-rigging including brochures and videos. This will include detailed guidance to relevant stakeholders, such as procurement officers, on how to structure tenders to avoid potential bid manipulation and how to detect bid manipulation more readily.

The Commission supports the URA's, the HKHS's and the Government's initiatives in this market

36. The Commission wishes to acknowledge that in administering the OBB Scheme, the URA and the HKHS have taken a number of important steps to address the problem of bid-rigging. Their formulation of OBB Maintenance Guidelines and New Tender Arrangements ("NTA") in consultation with the ICAC has gained notable success in improving the competitiveness of the tender process for OBB projects.
37. Under the NTA, three tender procedures originally handled by the authorised person, building management company and/or owners' corporation members of buildings under the OBB scheme were managed by an independent accounting firm appointed by the URA or HKHS. The whole process from collecting, acknowledging and recording expressions of interest, distributing tender documents as well as collecting and opening the returned tenders was carried out and certified by a certified public accountant. In order to encourage more building contractors to take part in the tendering process and in line with the OBB Maintenance Guidelines, 10 additional registered general building contractors were selected by the appointed independent accounting firm from a computer ballot to add to the list of tenderers.⁸
38. Before and after the introduction of the NTA in September 2013, in the cases handled by URA, the average number of expressions of interest for an OBB project rose from around 20 to 50, and the number of bids submitted rose from around 16 to 29. The most striking change was an increase in the share of projects for which actual award prices were in line with independent consultants' pre-tender estimates from around 54% to 93%.
39. The Commission also understands that the URA and the HKHS have referred suspected cases of bid-rigging with criminal elements to the Police and the ICAC.
40. The Government of the HKSAR has recently announced additional measures to combat bid-rigging. Specifically, on 10 May 2016 the URA launched the "Smart Tender" Building Rehabilitation Facilitating Services (pilot scheme) which will (1) set up an electronic bidding platform for property owners to invite bids and receive expressions of interest from contractors for building renovations, thereby keeping confidential the identity of the bidders until the bid opens, and (2) provide access for home owners to professional advice regarding the recommended scope of building renovation projects and estimated value of works.⁹

⁸ See announcement by URA and HKHS, available at <http://www.ura.org.hk/en/media/press-release/2013/20130918.aspx>

⁹ See <http://www.ura.org.hk/en/media/press-release/2016/20160510.aspx>

41. The Commission supports and encourages these Government initiatives. Hong Kong home owners will benefit significantly if markets for this important expense operate competitively – home owners would receive better prices, better quality services, and more choices in building renovation and maintenance. The electronic bidding platform proposed by the Government can, by partly anonymising bids, help tenders operate more effectively and protect against the establishment of bid rigging cartels. Similarly, the access to the professional advisory services proposed by the Government can assist home owners to be better informed and more able to distinguish between legitimate and collusive bids, and assist them to make better, more informed and competitive choices as to how to spend their money on the renovation and maintenance of their homes. The Commission welcomes these positive outcomes.

Going forward

42. The techniques developed in the context of this study could potentially be used to detect possible competition law violation going forward. The Commission now has the tools developed over the course of the study at its disposal. The ability to conduct a meaningful screening exercise depends very much on the amount and quality of data that are made available for analysis. In this connection, the Commission calls upon both the public and private sectors to work on collecting and building databanks of building maintenance-related tenders. For example, the Commission will explore with the Government the possibility of assessing data on different projects collected via the electronic bidding platform mentioned in paragraph 40 above.
43. As the tender process home owners use to award contracts may expose them to certain forms of bid-manipulation, information about how to prevent and detect bid-rigging is important. It is also important that consultants and contractors understand their obligations. The Commission has identified the need to undertake further education and outreach activities on bid-rigging. The Commission is launching a series of brochures, videos and exhibitions on this topic, and all participants or would-be participants in tenders are urged to actively find out more.
44. More generally the Commission could also see that there is considerable scope to work with stakeholders such as the URA and the ICAC and other government bodies to closely review the process of awarding work in this area and to recommend measures that could help protect home owners. This could, for example, involve recommended changes to the tendering process and tender documents. For example, consultants and contractors could be required to declare that no bid-rigging has occurred when submitting tenders. This would ensure that bidders turn their minds to the need to ensure no bid-rigging has occurred. Additionally, if the bid is subsequently found to be rigged the tenderer may be able to take private action in respect of the misleading declaration.

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45. Consultants of different professions and contractors play an essential role in building maintenance projects. The market study has highlighted possible concerns about the participation of some of these players in bid-manipulation practices. In this connection, the Commission calls upon the relevant industries and professional bodies to develop and strengthen the codes of conduct for their members to give due regard to the competition rules. The Commission stands ready to facilitate these industries and professional bodies in such an exercise.

Conclusion

46. This market study has considered the issue of bid-manipulation in residential building renovation and maintenance project tenders. The Commission's use of screening techniques to analyse tender outcomes has revealed patterns that would be consistent with the wide-spread feeling among the public that there may have been problems in building renovation and maintenance markets. If the Commission were to obtain similar results today, it would very likely investigate further certain patterns highlighted by the analysis. The results of the study will be used to inform the Commission's enforcement and advocacy activities now that the Competition Ordinance is in full effect.
47. Those who might be tempted to manipulate bids in contravention of the competition rules should know that the Commission is watching and it has at its disposal a number of different tools to detect such contraventions. The Commission understands what has been taking place, and it will investigate where it can. Those contemplating rigging a bid should abandon such projects. Those already involved in rigging bids should realise that they are involved in serious anti-competitive conduct and should do the right thing by approaching the Commission to apply for leniency under the Commission's Leniency Programme to avoid the risk of facing substantial penalties and other sanctions. The Commission has identified bid-rigging cartels as a priority for enforcement and will use the full extent of its powers to end bid-rigging cartels.
48. The study also provides an opportunity for the Commission to share knowledge with relevant government departments and public authorities to assist them to identify where potentially anti-competitive bid-rigging conduct has occurred, and measures that can be taken to minimise the risk of it occurring in the future. Additionally, where the Commission identifies bid-manipulation that is unlikely to contravene the Competition Ordinance, but may be an offence under other laws (e.g. anti-corruption or bribery laws) the Commission will refer relevant cases to the appropriate authorities such as the Police and the ICAC.

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