

Causes and Prevention of Collusion in Engineering Bidding

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Abstract

The implementation of the bidding system is aimed at promoting the formation of open, fair, impartial and competitive environment, and achieving a healthy competitive mechanism of “the survival of the fittest”. At the same time, it is the role of fundamental supporting to optimize the allocation of resources in the market plays. However, the phenomenon of engineering bidding collusion has broken this rule, which has seriously affected the sustainable development of the construction market. In this paper, the research object is the collusion behavior of Engineering bidding, and the influencing factors, formation causes, and the prevention measures are analyzed and studied, to provide the basis for the healthy development of the construction market. It has important practical significance to build a fair and orderly competition environment.

Keywords

Bidding collusion; Formation cause; Management thought; Preventive measures.

1. Introduction

Significant achievements have been made in a large number of construction projects, such as the Three Gorges project, the Qinghai Tibet railway and so on. But there are still a series of problems need to be solved in the construction project bidding. The development of project bidding system in our country is becoming more and more mature, but it does not eliminate the problem of collusion. It not only has certain harm to the development of the construction industry, but also is an important hidden danger of social and economic development. So it is necessary to conduct a systematic and thorough research on the collusion behavior, causes, prevention and so on. In this paper, based on the current practice of China's construction engineering background, the construction project bidding collusion problem is analyzed in theory and practice. On the one hand, it is important to study the cause of the formation on the collusion for improving the efficiency of the market economy system, so as to provide theoretical basis for the prevention and control of collusion, and to improve the pertinence and effectiveness of the collusion prevention measures. On the other hand, there is the practical significance to construct an effective collusion governance mechanism, which is conducive to curb the corruption of the project, strengthen the safety management of engineering quality, and ensure the protection of the healthy market competition.

2. Expression Forms of Engineering Bidding Collusion Behavior

Guo Nanyun^[1] described and generalized the engineering collusion. Engineering collusion refers to the bidding and construction stage, in which the project owners for seeking rent, cooperated with bidding companies, to help it win the bid; Or mutual consultation between the bidders; Or supervision unit and construction contractor collaboration on the project quality and safety of false identification. In addition, there are more studies to summarize the engineering collusion behavior, namely, it is the behavior, in

which the project stakeholders are in collusion with each other, with improper methods or ways to damage the interests of the project or the collective [2].

There are many participating parties in the project bidding phase, such as the tender, the bidder, commissioned by the tender agent, the government departments and relevant experts in charge of the tender and so on. The main means of the project bidding collusion refers to the collusion among the tender bidding, the tendering agent and the bidding agency. And the form of collusion between the three parties can be shown as shown in fig.1, here are a total of 5 types. In which the collusion among multiple bidders can be referred to as horizontal collusion, while the other 4 types of collusion are vertical collusion [3].

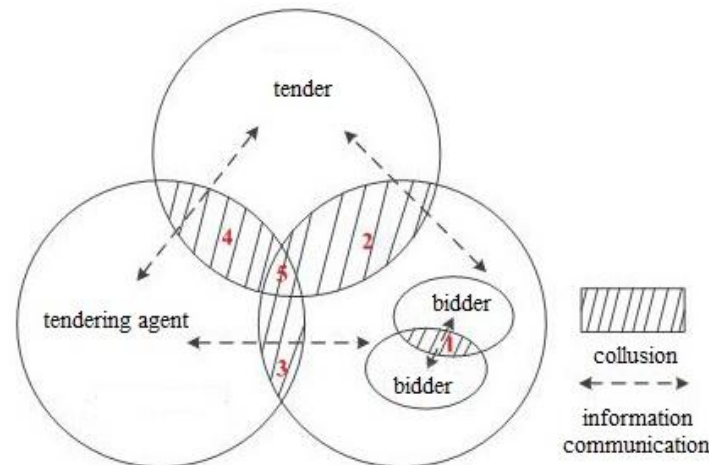


Fig 1.the performance types of bidding and tendering

3. Analysis of Key Influencing Factors on Project Bidding Collusion

3.1 Identify Initial Factors

It is convenient to identify the influence factors of the project bidding collusion, through the reading of massive rich and complex related documents and information on the project bidding collusion, and combined with the actual project bidding and a series of phenomena in the bidding process to ascertain, formed profound rational and perceptual knowledge of the phenomenon on engineering bidding collusion. The valuable documents and information are collected to be carefully studied, carefully considered and patiently selected, then finishing and analysis formed initial list of influence factors which based on the literature research of project tendering and bidding collusion. After regular, statistics and analysis, it mainly includes two aspects: the external factors and internal factors.

3.1.1 External Influencing Factors

(1) Policy System

Bidding Law regularized the bad behavior in the process of the implementation on the project bidding, but there are still a lot of problems. Bidding collusion phenomenon emerge in endlessly, attributed in the imperfect laws and regulations of tender system, the lacks of bidding market supervision system, and the bidder's strict access and withdrawal system have not been formulated; the collusive behavior standards and punishment measure on industry regulations have not been set, and engineering guarantee system needs to be perfected.

(2) Market Environment

The competitive pressure of the bidding market is becoming more and more intense. The development of unsound and unhealthy derived a lot of illegal bidding and bad behavior.

Mainly due to the lack of a standardized market supervision system, the whole market recruit bidding order confusion; And the overall credit of the bidding participants lack day by day; The unhealthy business environment resulted in the bidding market atmosphere into the point of a vicious circle.

(3) Administrative Supervision

In china, some officials driven by the interests, conspired with bidders to seek illegal high returns, which caused a serious disorder of the construction market order, driven by the production of the project conspiracy. Secondly, the supervision of the government administrative departments is seriously lacking, and the system is imperfect and coupled with the difficulty of the collusion investigation. If the government has found the project collusion behavior, they just look the other way. It would be to become quite common in the project bidding markets, which has caused serious consequences.

3.1.2 Internal Influencing Factors

(1) Tender

At present, the quality of the tender in our country is uneven, and the behavior has occurred that used the hands of the public to seek personal gain.

The tender rarely holds the basic principle of open, fairness, justice to strict preside over the bidding activities, which also contributed to the project bidding collusion phenomenon continues to breed.

(2) Bidder

With the increasingly fierce competition in the market, the asymmetric information among bidders causes the competitive pressure of the bidders. In order to seek the market position, and enterprises can survive and develop, but also because of low cost and not easy to be found, which drives the bidder to promote the breeding of collusion and obtain more economic benefits.

(3) Tendering Agency

Tendering agency as the main intermediary in the process of bidding and tendering activities, is entrusted to just, fair and open take charge of the whole project bidding process by the tender, and promote the tendering and bidding activities carried out smoothly^[4]. At present, the development of the bidding agency market is imperfect, and the bidding agency exists many disadvantages, which leads to many projects bidding collusion.

3.2 Fixed Initial Impact Factor

After conducting the literature research and the observation of phenomenon, we initially identify the elements of the formation on the bidding collusion, and form the initial list of the system, so as to summarize four aspects of the main factors consisting of the policy system, the market environment, government regulation, bidding and other main factors. Whether it can be truthfully, comprehensive, scientific reflected the impact of the current project bidding collusion factors, need to further invite relevant experts to carry out professional degree, correlation, comprehensive interview.

The initial identified list conducts interview and discussion of experts, which asked investigated experts on the construction market bidding to have a deep understanding and rich experience in many years of practice, and to have a good foundation for the project bidding. It strictly guided the evaluation of the objectivity and complement in accordance with the initial listing and the existing market bidding collusion phenomenon. That provides a certain guarantee for the project bidding of the construction and the influence factors to further the amend and improve.

In the course of the investigation, in addition to the literature research to identify the initial coding list of project bidding collusion influence factor, most research experts believe that the impact of the project bidding collusion have many factors to be further excavated, and it also has cross and overlap between individual factors. Finally, the views and suggestions on the influence factors of the project bidding collusion by the unified visitors, and based on the further academic literature research and supplement, the influence factors of project bidding collusion are divided into six aspects, and which mainly included 20 factors. Specifics are shown in table 1.

Table 1 influence factor list of project bidding collusion

Classification	Influence Factor
Policy System	Perfection Degree of the Bidding Laws and Regulations

	Completeness of Market access and withdrawal system
	Perfection Degree of Engineering Guarantee System
	Determination Criterion of Collusion Behavior
	Punishment Standard of Collusion Behavior
Market Environment	Degree of Competition Engineering Bidding Market
	Perfection Degree of Honesty and Credit System
	Market Information Symmetry
Interest Demand	Space of Power Rent-seeking
	Self-interest and Opportunism of Market Main Body
	Feasibility of Collusion
Participating Subject	Discretion of tender
	Bidder Moral Quality
	Strength of Bidder
Process Evaluation	Subjectivity of Evaluation Process
	Scientific of Evaluation Method
	Evaluation Expert Compensation
Principal Agent	Tendering Agency Cost
	Tendering Agency Professional Operating Skills
	Performance Evaluation of Bidding Agency

4. Analysis of Formation Cause in Engineering Bidding Collusion

Using system dynamics (SD) constructed the influence relationship model between the key influencing factors of bidding and tendering, to clarify the internal relationship and clarify the relationship between them, to clear the internal relationship and clarify the interaction. Then the form of causal loop diagrams, namely vivid image will be sorted it out the internal logical relationship, and it vividly reflect the internal influence mechanism of each influencing factor on the engineering recruit collusion in bidding process.

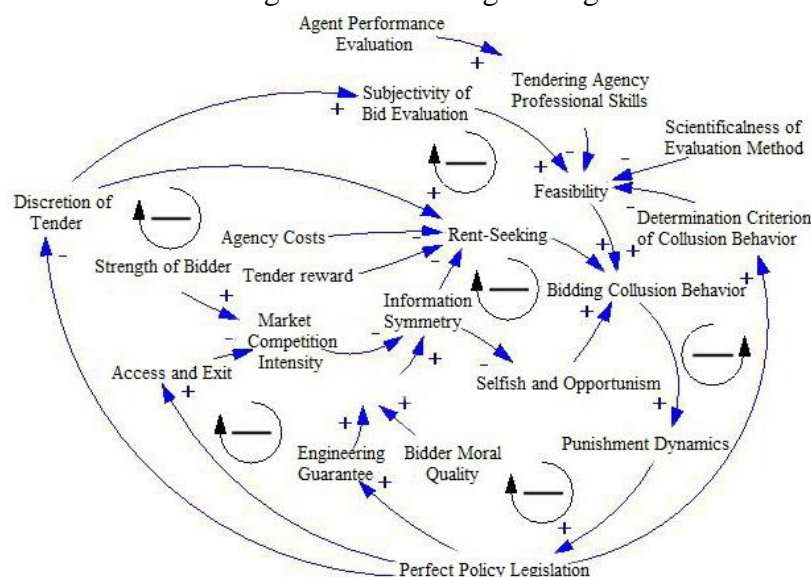


Fig.1 the Influence Relationship Model of Collusion in Engineering Bidding

At the same time, it also reveals the causal relationship and positive and negative relations between the factors, in order to enhance the overall promotion of the project bidding conspiracy to generate the cognitive depth^[5]. The influence relationship model of collusion in engineering bidding is shown in Fig. 1

The causal relationship model in Fig.1 can be used to sort out a total of 6 loops, the overall impact of the model is more complex. Here are several representative causal loops.

1. Engineering guarantee system is conducive to the construction of the credit system, to effectively transfer and avoid risks; Credit system construction is imperfect, and the bidder information is incomplete, inaccurate, resulting in asymmetric information; Information asymmetric amplifies self-interest and opportunism tendency of participating subject, meanwhile information asymmetry also expanded the "rent-seeking space, which is conducive to collusion. Once the collusion behavior occurs, the discovery is based on the corresponding rules and regulations to punish, but also to promote the further improvement of the policy legislation.

2. Strict access and withdrawal system can protect the orderly competition in the market, to eliminate vicious competition; If the market competition is fierce, many participants are prone to asymmetric information, and all the relevant information of the main body can be not grasped; Bring an opportunity for participants to "Rent-seeking" to obtain illegal interests, which may be a conspiracy.

5. Management and prevention of collusion in bidding and tendering

5.1 Governance Framework of Project Bidding and Tendering

The project bidding and tendering management embodies the system arrangement of the participation subject right, responsibility and benefit in the project bidding, which can be divided into internal governance and external governance ^[6]. The internal governance mainly refers to the game decision-making process among the participants, through the effective power and expense and so on, the incentive and the policy legislation and other means to drive the participation main body to regulate its behavior; External governance utilizes the external environment to regulate the project bidding to participate in the main body, and avail oneself of reputation, supervision and other ways to strengthen the participation of the main body on the attention of the long-term interests. At the same time, the governance framework of the project bidding and tendering is formed, by improving the collusion cost and reducing the idea of collusion. The governance framework of project bidding and tendering is shown in Fig.2.

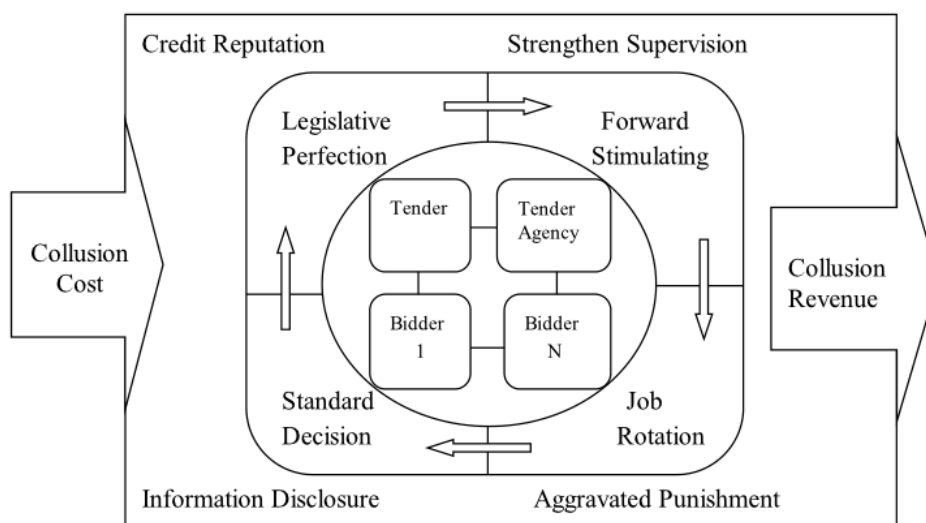


Fig.2 the Governance Framework of Project Bidding and Tendering

5.2 Management Thought of Project Bidding and Tendering

The collusion of project bidding is caused by various factors. But the main reason is that the gains or rents obtained are greater than the costs paid by bidding collusion. It induces the participation of the participants to obtain the illegal interests by the collusion, thereby causing the phenomenon of collusion. Management of project bidding collusion can be thought from the perspective of internal and external, to prevent the collusion of the project bidding to reduce the income of the collusion and increase the cost of the conspiracy.

1. Collusion Cost Increase

(1) Post-qualification

The more bidders are introduced to participate in the competition by qualification, so that people with conspiracy ideas need to pay more costs to organize collusion.

(2) Electronic Bidding

In order to reduce the face to face communication between the bidders, it makes everyone participate in the tender by the form of anonymous. The electronic tendering platform is used to transfer exhaustive information, which effectively blocks the information to transfer among the bidders, increasing the transaction cost of the unit or individual with the idea of conspiracy to obtain the information of others.

(3) Strengthen Punishment

If the punishment is lower than the collusion, then the bidders are more willing to choose the conspiracy. Therefore, to improve the probability of the investigation, and to reveal more about the whole process of project bidding, that can enhance the risk of collusion between bidders.

2. Collusion Income Reduction

(1) Scientific Method

Scientific and reasonable evaluation method is helpful to the fair and just in the process of construction, such as the lowest tender price method. It can effectively avoid the bidder to win the bid, and the lowest tender price method is more reasonable. At the same time, compared with the comprehensive evaluation method, the subjective judgment and operation are reduced, and the bid evaluation committee of the bidder is avoided.

(2) Credit Reputation

According to the bidders' collusion behavior, the good faith is announced. It not only damages the reputation, but also strictly enforces the system, that can reduce the chance of bidding and the chance of winning the bid.

(3) Limiting Compensation

Collusion lead bidder to bid less than other bidders to bid. In the course of the project implementation, the collusion is expected to make up for the change of the project and the claim.

The tender may strengthen the late changes of the audit and management of claims, to identify unnecessary engineering changes and unreasonable claims, thereby blocking the idea of the successful bidder, so that other bidders can't obtain the corresponding interest.

5.3 Management of Project Bidding and Tendering

Governance of project bidding collusion contents from the internal governance and external governance of the relevant preventive measures. Internal governance starts from the following several aspects: continuing to improve the policy legislation, the establishment of positive incentive system, the development of behavior determination standards and improving job rotation system and so on; External governance includes the implementation of information disclosure mechanism, the establishment of the credibility and the reputation mechanism, the aggrandizement of supervision and management process, the intensity of investigation and punishment. Through these preventive measures can find a feasible way of governance.

6. Conclusion

This paper analyzed and explained the engineering recruit bidding collusion behavior. But due to the project bidding with rich practical value and conspiracy related issues have attracted much attention. In this paper, the research is still in the initial stage, and has a lack of systematic understanding. It should be further discussed and studied from multi perspective, multi case verification and so on.

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