

# Chapter 119

## Strategy Selection of the Government in Monitoring the Quality of the Economical Housing Project: Based on the Research on the Economical Housing Market in Xi'an

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**Abstract** Economical housing, with the double nature of commodity and protection, is a kind of policy housing that is built in accordance with a reasonable construction standard through the government provides preferential policies, limited to the dwelling size and selling price. Based on the status of quality monitoring of the economical housing project in China, This paper set Xi'an economical housing market for example, through researching on it to further elaborate the problems of traditional quality monitoring and control system of economical housing in actual operation and necessity for the government to transform quality monitoring and control strategy of economical housing. Finally, this paper find out the key and a valid path that promote real estate developers to change from “adapt to economical housing project quality supervision” to the “autonomous to assure” through analyzing behavior decision-making process of government and real estate developers in economical housing quality monitoring and control with the help of the game model. This can provide ideas to enhance the efficiency of monitoring the quality of China's economical housing project and to update the regulatory model of economical housing project.

**Keywords** Economical housing • Project quality • Supervision strategy

### 119.1 Introduction

#### 119.1.1 Background and Literature Review

In recent years, with the speeding up of industrialization and urbanization, more and more people go from the countryside to cities, then, economical housing construction scale expands unceasingly. For quality supervision, our country executes a kind

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of management mode that the construction and administrative department under the state council is responsible for the national economical housing, the local people's government at or above the county level or the real estate construction administrative departments is responsible for economical housing management in their own administrative areas. According to their duties and the division, the development and reform, price, censorial, finance, land resources, tax and financial management departments from the people's government at or above the county level implement supervision and management in the areas of responsibility.

Although the supervision system in the economical housing development and the construction process played a very important role, this kind of supervision model is still the government-led economical housing project quality control system. With quality problems emerge in endlessly, for example, HuiZe garden district of chenzhou. This research has important meaning in improving the economical housing which is the biggest local economical housing project in human province, appear ceiling transverse rupture and other serious engineering quality problems, something originally is good for the people drew more controversy, make traditional government-led economical housing project supervision and management model come under suspicion, therefore, in the present situation, the comprehensive analysis in the government-led economical housing project supervision system in our country and control system of the enterprise's own, especially the government actually should take which way and from which respect for economical housing project supervision and management project quality supervision efficiency, balancing different interest demands between business and government.

There is not so much research about economical housing project quality supervision. Liang Jing [1] did some research on the quality question of economical housing from the perspective of positioning failure of government function, points out that the real estate development enterprise is directly responsible for the construction and sales of the economical housing. Developers and enterprise, to a certain extent, as equal market economic body, their starting point of all activities are based on profit. The government's regulatory absence caused that there is no obvious price difference between economical housing and commodity house, poor quality and so on a series of problems. The government should be responsible for making up for the shortage of market mechanism, not substitute market. In the implementation process of economical housing policy, improper implementation, to intervene to market too deep, too broad scope, away from the normal government function are also harmful to the normal operation of the market mechanism [1]. Hu Hailin et al. [2] did some research on the quality control problems from the perspective of economical housing construction investment and points out that the low cost of economical housing project decides to low profits of the parties. As a contractor, suppliers, reducing cost and pursuing the biggest profits is always its target. If we do not finish good quality control, this will lead to lower the quality of projects in the event. If you don't do well in beforehand control, once appear quality problem, it will influence making a room, so that the sales very likely [2].

### ***119.1.2 Research Framework***

The government is the macroscopic guide and the supervisor in the process of the enterprise's economical housing project quality control and management, enterprise is the microcosmic body and direct performer [3].

In the current government-led economical housing project quality supervision control system, the enterprise passively accept and implement rules and regulations, management measures made by the government, at the same time, the enterprise form its own economical housing quality control system based on this. The paper will define this as "adaptive economical housing project quality supervision" mode. Along with the expansion of economical housing market in our country and constantly complicated development environment, this kind of traditional government mandatory regulation method already do not adapt to the development of economical housing market – regulatory effect is not good. Real estate development enterprises shall undertake its own responsibility of economical housing project quality control, strict self-discipline, to construct the enterprise-led quality assurance system, improve the efficiency of quality control, this paper will define such supervision model as "independent economical housing project quality supervision" pattern, set xi'an economical housing market as an example, through the case investigation, further elaborates on the existing problems that appear when the traditional supervision system is in the actual operation and the necessity of transforming function for the government, at last, through the Game model to analyze the behavior decision-making process of government and enterprise in economical housing quality supervision and control, and then, find out an effective way that realize the government's regulatory strategies selection.

## **119.2 Economical Housing Market Case: The Traditional Quality-Control System**

### ***119.2.1 Research Results of Xi'an Economical Housing Project Quality: The Necessity for Government to Change Regulatory Strategy***

A set of regulatory system is effective or not is not how much system is establishment – a complete system, if cannot be put in good implementation, its effectiveness is zero, might even be a negative value. To set xi'an economical housing market as an example, the article adopt the qualitative research method – make an on-the-shot investigation into the actual effect of economical housing development and construction and residents satisfaction in the present government-led economical housing project control system. The specific methods: selected 15 economical housing projects in xi'an (Feng yun lan wan, xuanwu garden, Oriental courtyard and so on),

and then selected 1 owner in every project randomly as interview object, encoded each object, and then depth interview, through the interview, we got some information about the economical housing quality. The results show that, during the 15 owners, there are 8 owners are not satisfied to the purchasing experience. For example, NO.1 owner said that the construction quality of economical housing is very poor, the wall have crack; The specific is shown in Table 119.1.

We can draw the conclusion that we must put more attention to economical housing project control, otherwise, it will bring more economic and social problems.

**Table 119.1** Interview results about xi'an economical housing quality problem

Quality problem type	Project	Construction area(m <sup>2</sup> )	Average selling prices (yuan/m <sup>2</sup> )	Owner said
Design quality	Natural courtyard	175,084	3,100	NO.6 “all the windows in the stair are fixed, have no ventilation in summer, the houses are not north-south transparency”
	Chang an yiju	210,000	2,600	NO.10 “Across the street is the construction of substation, which will have great influence on the resident – electromagnetic radiation within 500 m”
Construction quality	Feng yun lan wan	300,000	3,700	NO.1 “I’m on building 18, our house had just finished decoration more than a week, I found that sitting room and the other two rooms all have a long crack on the wall”
	Tang Du warm springs garden	145,000	2,600	NO.8 “Seeing the cracks in the balcony, I feel horrible and also concerned about it, such a heavy cement down from here, is no laughing matter”
	oriental courtyard	80,000	2,987	NO.4 “The contract of economical housing project – oriental courtyard written expressly elevator for joint venture elevator, but now for domestic ‘Montgomery’ brand”
After-sales service quality	Xuanwu garden	49,000	2,912	NO.3 “Our district is a family-based management, does not satisfy the contract conditions to make a room, and we can’t ask for it, so long as the owner asked about this matter, developers will be very angry, like the appearance of the fight”

(continued)

**Table 119.1** (continued)

Quality problem type	Project	Construction area(m <sup>2</sup> )	Average selling prices (yuan/m <sup>2</sup> )	Owner said
	Big garden	170,000	2,250	NO.14 "I bought 53 # economic room of big garden in 2008, in the contract, the date that pay for room on is December, 2008, but by December 2009, no news, no one answer the phone also"
	Daniel century splendid	500,000	3,600	NO.15 "the entrance of each unit stays a dump, decorate garbage, life rubbish what all have, fly all over the place"

### ***119.2.2 The Existing Problems on Present Quality Supervision Model***

1. The relative displacement of the regulation target between the central government and local government. The enterprise follow the general guidelines made by the central government in development and construction of economical housing, and then implement by local governments according to the local actual situation. For the central government, the main goal of implementing economical housing construction is to solve the housing problem of the low-income family and to promote harmony and development of the whole society; The state set development and the construction of economical housing as the content of local government performance appraisal, so for local government, it will pay more attention to short-term benefits and construction quantity of the economical housing, neglect economical housing quality supervision. In the process of economical housing's development and construction, the local government is the main supervision.
2. The regulatory system are not perfect. The existing economical housing project supervision system is mostly for project application that is market access supervision before the project construction, to project construction period, the quality supervision and management system is in deficiency. This leads to just value the project application etc. of the early work, once the application is successful, in the process of project construction, the real estate developers do not pay attention to the quality guarantee. Especially for inferior quality problem, there is no more concrete processing and control measures to develop and implement.
3. The power rent-seeking phenomenon is seriously, the regulatory system become a mere formality. Although our country's supervision mechanism has been

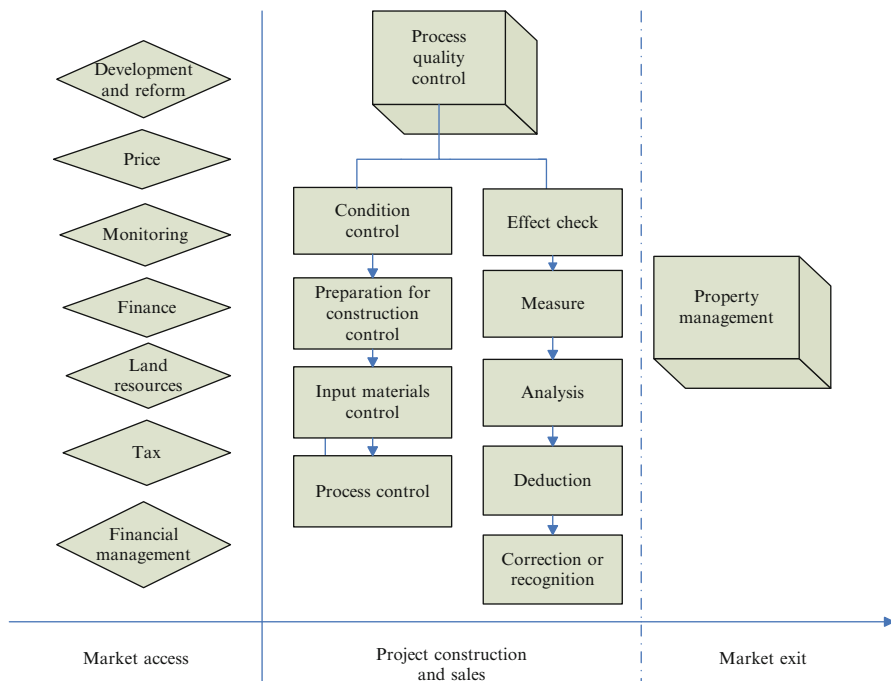


Fig. 119.1 Real estate developers' own project quality control system

relatively systematic and diversified, the government behavior which is out of control is not getting good control, more and more money-power trades bring unqualified developer into the housing market, and disturb the order of the economical housing market, then make the economical housing supervision system stay in an almost state of vacuum.

### 119.2.3 Economical Housing Project's Own Supervision Mode

The government formulated economical housing layout and construction system, price making, sales management system, listed trading system, supervision and management system, and so on, but these are basically made by the government, the market is responsible only for concrete implementation, which contributed to the formation of the real estate developers' own project quality control system (see Fig. 119.1), this system emphasizes "control", that is, to build passively and not independently under the government's instruction and guidance [4].

In this passive environment, relative to the commodity house, enterprise's idea for economical housing project quality control has been in serious distortion.

1. Excessive cost control. Following the principle of small profit, the economical housing sales execute government guided-price, and it cannot be altered casually. Undoubtedly, this will increase the investment risk. Because of the nature of rational economic man, in order to seek more interest, real estate developers must control cost strictly. For example, the survey found, economical housing project often choose construction team whose price is low.
2. Ignore quality supervision. Economical housing's small profit and the supervision of government to economical housing quality is not in place, especially now, living demand and investment demand inflate constantly, there is no difficult in economical housing sales. Many of those factors commonly cause that the economical housing developers don't care about project quality basically.
3. Lack of service management. The after-sales services of economical housing much couldn't keep up with others, the survey found, the economical housing owner once discover quality problem, developers cannot give a very good solution mostly, and bad attitudes.

## 119.3 The Game Analysis

### 119.3.1 Model Assumption

In this model, the participant are rational, that is to say, they are pursuing their own best interests; The information is not complete, that is, the game both parties have no accurate understanding to each other's characteristics, action rule and the utility function [5].

1. Game player and its action. This paper mainly studies the game between the government and enterprise, so there are two participants – the government and enterprises. For the government, there are two strategies, one kind is to stick to traditional regulatory model, the government leading, namely the adaptive control. Another kind is to reduce government intervention, encourage enterprises to consciously assume quality supervision, namely the independent regulation. And the economical housing development enterprises also have two options: positive execution and passive resistance in this regulation mode.
2. Utility function. The utility functions of participants are not only affected by their own actions, but also by the action with each other. The utility mainly depends on three factors: the profits when the economical housing quality improved, including both public revenue and the enterprise's private gains. The second is the costs that must be input to strengthen the supervision and management of economical housing. The third is risk cost that is punished when implement illegal operation.

### 119.3.2 The Game Model of Government-Enterprise About Economical Housing Quality Supervision

1. The construction of comprehensive strategy game model. In the economical housing project supervision, the government and enterprise, as the participants of the game, have their own strategies, each strategy choice has its own cost that must undertake and profits. As shown in Table 119.2.

According to the analysis above, we can draw the Game matrix between the government and enterprises, as shown in Fig. 119.2.

2. Game model analysis

In the model, the government’s mixed strategy is  $(p, 1-p)$ , that is, the probability for government to adopt adaptive regulatory is  $p$ , independent regulatory is  $1-p$ ; Similarly, enterprise’s mixed strategy is  $(q, 1-q)$ , namely, the probability for enterprise to adopt positive quality control is  $q$ , passive resistance is  $1-q$ .

In the game, when the player is not clear about other player’s actual strategy selection, his strategy is uncertain, for this, people can predict their benefits only by the way of calculating expected return.

The government’s expected return for:

$$U1(p, q) = (c - h - e)pq + (c - e)(1 - p)q + (d - h)p(1 - q) + (-s - e)(1 - p)(1 - q) \tag{119.1}$$

Similarly, enterprise’s expected return for:

$$U2(p, q) = (e + r - g)pq + (r + e - g)(1 - p)q + (-d)p(1 - q) + e(1 - p)(1 - q) \tag{119.2}$$

In the formula (119.1), for partial derivative of  $p$ :

$$\frac{\partial U}{\partial P} = d + s + e - h - (d + s + e)q \tag{119.3}$$

Make formula (119.3) = 0, draw:  $q = 1 - \frac{h}{d + s + e}$

In the formula (119.2), for partial derivative of  $q$ :

$$\frac{\partial U}{\partial Q} = r - g + (e + d)p \tag{119.4}$$

Make formula (119.4) = 0, draw:  $p = \frac{g - r}{e + d}$

We can conclude that when the government supervise with the probability  $p = \frac{g-r}{e+d}$ , the enterprise take a positive quality control with the probability  $q = 1 - \frac{h}{d+s+e}$ , both sides receive the largest utility – reach the balance of interests.



**Table 119.2** The costs and benefits of government and enterprise in the game

The government		Enterprise	
Letters	Items	Letters	Items
h	Supervision and examination expenses	g	The required fee when actively implement quality management according to the government's request
c	Public interest brought when the enterprise control quality positively	r	Brought extra private gains because of standard management
e	Support fund every year	d	Punishment capital that the enterprise pay when it passively resist government's quality management, then discovered by the government
d	Punishment capital that the enterprise pay when it passively resist government's quality management, then discovered by the government	e	1. Support fund every year 2. Support fund the government deduct when enterprise Passively resist on government quality management, and then discovered by the government
s	The government loss when the government implement independent supervision, enterprise did not cooperate with		

		enterprise	
		Positive execution	Passive resistance
The government	Adaptive supervision	(c-h-e, e+r-g)	(d-h, -d)
	Independent regulatory	(c-e, r+e-g)	(-s-e, e)

**Fig. 119.2** The game matrix government and enterprise

The government has all kinds of measures that require the enterprises to carry out, but these policies may not conform to the enterprise's actual situation, so, in the whole process of policy implementation, the enterprise just accept passively, caused the enterprise's own regulation enthusiasm is not high, and the regulation efficiency is low.

According to the results of the Game model of comprehensive strategy, in order to improve the probability of the enterprises to actively carry on quality control, we can reduce h (supervision and inspection fees, which means to reduce the number of inspection), improve d (punishment capital that the enterprise pay when it passively resist government's quality management, then discovered by the government), e (the support capital the government provide to every year), and the proper enlargement of s (the government loss when the government implement independent supervision, enterprise did not cooperate with).

## 119.4 Conclusion

We Comprehensively concluded that the government should gradually reduce unnecessary intervention on real estate development enterprise, but adopt market regulation means to incentive and promote enterprise's own strengthen to economical housing quality supervision, enhance the pertinence and effectiveness of the government and enterprise both in economical housing quality supervision and control and finally achieve a goal that the supervision system change from the government-led "adaptive supervision" to enterprise-led "independent regulatory".

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