

Exploring The Pricing Mechanism of Open Access Resources: A Case Study of West Lake

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Abstract

In recent years, the argument between “price rising” and “free in price” of the public scenic spot gradually becomes the focus attention to the whole society. From the angle view of institution analysis, this paper makes an economic analysis and summary for the free-opening condition based on the typical cases of West Lake Scenic Spots. By giving the premise for a free open based on a formal model after a brief introduction of the practice launched by Hangzhou Municipal Government concerning West Lake, and then proceeding to analyze the reason why it succeeds, we demonstrate the conditions under which the public spots can be free-opened and what kind of institution design can make sure the operation stable. The solutions of these questions are important to the economicsociety development and public welfare improving. At the same time, this is also a new exploration for public affairs management, which means we should understand how to avoid the tragedy of the commons upon the free in price rule.

Key words: PUBLIC SCENIC SPOT, FREE IN PRICE, WEST LAKE, SYSTEM ANALYSIS, POSITIVE EXTERNALITIES

1. Introduction

In the year 2007, a regulation concerning the ticket price of tourist attractions

was issued by the National Development and Reform Commission of China: price adjustment should not be made at least every

three years. And in 2012, it comes again the opportunity for a price raise. After the long repression, ticket price for many tourist attractions vindictively sours, which has brought the long existing problem into another heated debate: can we have the public scenic spots free?

The scenic area can be classified into public goods, or at least club goods [1]. Theoretically, as the demand for public goods is usually unidentifiable, it is justified for a third party (usually the government) to implement tax or to charge fee on consumers, collecting the funds for construction and protection. However, due to externalities, there are two optimal levels for pricing: one for suppliers, the other for the society. In China, most scenic areas are, due to the management prescriptions, private properties of certain department of the local governments who plays the role of a monopoly supplier. Therefore, the optimal pricing strategy for the supplier is much more favored. With the positive externality of scenic areas, the pricing level of this specific pricing strategy often goes beyond that of the social optimal pricing strategy, consequently excluding part of the potential consumers [2], resulting in a loss of the overall social welfare.

While a majority of scenic areas adopt the monopoly pricing strategy, some still remain to side with social optimality. One prominent example concerns the West Lake in Hangzhou, which has been open for free since 2002. Ever since then, it has been under fairly good operation, and generated substantial social benefits by attracting much more tourists and then generating great positive externalities to the city. To be more specific, it boosts the development of tourism and other related industries and then the economic performance of the whole city. It also improves the consumer surplus of local residents. With the startling achievement of a free West Lake, more scenic spots turn to follow the lead, such as the Silver Beach in Beihai (Guangxi Province), Xuanwu Lake and Dr. Sun Yat-sen's Mausoleum in Nanjing (Jiangsu Province). However, not all the free opening trials have succeeded. Some, as the Silver Beach, met with great difficulty during the process. So here comes the question: Why some free opening trials are successful, while some are not? What is the precondition for opening access for the public scenic areas? In

order to succeed, what should we do after free opening?

This paper tries to answer these question based on the free opening practice of the West Lake. First of all, this paper gives the premise for a free open based on a formal model after a brief introduction of the practice launched by Hangzhou Municipal Government concerning West Lake, and then proceeds to analyze the reason why it succeeds. The paper argues that the precondition may lie in the great potential externality brought about by the free open of the West Lake, which is closely related to the natural attributes of the West Lake: its huge capacity and its melting with the commercial centers in Hangzhou. These attributes of the West Lake not only delays the negative externality in the sense of congestion effect, but also strengthens the positive externality of the increasing number of tourists visiting the West Lake. However, the positive externality provides only a possibility for a free West Lake. That the institutional innovations initiated by Hangzhou Municipal Government guarantees the success operation of this policy. It set up an specialized institution to internalize the cost of free opening, and established a series of financial arrangement to balance the interests of different groups.

The paper is arranged as follows: Section 2 serves as a case overview; in section 3, a formal model is given to illustrate the premises of a free open; section 4 introduces the design and implementation of indemnificatory organizations that the government of Hangzhou made in order to guarantee the operation of a free open; and finally, the conclusion.

2. Case overview

2.1. The basic features of the West Lake

We will start from summing up the natural attributes of the West Lake. Understanding the natural attributes of the objects is very important, as they on the one hand may directly shape the production function of public goods, and on the other hand may influence the extent of the externality of public goods.

The West Lake is located in Hangzhou, Zhejiang Province. It is surrounded by mountains on three sides and faces the city on one side, and consisted of a range of nearly 60 square kilometers of the natural landscape

and historical sites, including 60 national, provincial and municipal units of cultural relics protection and 122 main scenic spots. In 2011, it was listed as the world cultural heritage.

Based on the local government's introduction, the typical attributes of West Lake can be summed up as following. First of all, the West Lake is a kind of club goods, and has all the attributes of ordinary public goods. Secondly, the West Lake is typically a urban lake scenic area, and coincides with the commercial centers of Hangzhou in geographic position perfectly. As a result, tourists of West Lake could naturally be "transformed" into consumers of commercial goods and services, and then generate positive externality. Thirdly, the West Lake covers a broad area and made up of numerous scenic spots, therefore could accommodate considerable tourists. According to the estimation of the West Lake Administrative Committee (WLAC is short for West Lake Administrative Committee hereafter), the possible maximum capacity of the scenic area is 270,000 passengers per day. It means that, the optimal supply level of the scenic area is considerably huge, and tourists would face a congestion effect with a low possibility. Finally, the West Lake has substantially high intangible value. Being the representative of Hangzhou, one of the six ancient capitals of China, and being the world cultural heritage, West Lake has already won a high fame both at home and at abroad.

It can be seen from later analysis that it's the latter three respects of such attributes that lay out the foundation for the free opening in West Lake.

2.2. Outlining the process of the West Lake free opening policy

The West Lake has gone through three stages with regard to charging: free opening since 1949, charging since 1979, and free again since 2002. The charging stages can be further divided into three periods according to the form of charging: a period of low fee in small range from 1979 to 1988, a period of gradual increase in charging from 1989 to 1995, and a period of rapid increase in charging from 1996 to 2002. The process of free opening since 2002 has also been advanced step by step. The family of free opening would be joined in by new members every year. Till now, almost 80% of the public parks are free access to tourists except 19

scenic spots¹ and the gross area of free access has already exceeded 2000 hectares (Table 1). In general, West Lake has taken the hybrid business model of "fee and free".

The free opening process of West Lake relies on the "West Lake Protection and Restoration Project" "which is started in 2001. This is a major public project directed by Hangzhou Municipal Government based on the goal of "being inscribed on the World Heritage List", focusing on the center scenic area of West Lake, and carrying out in stages according to engineering principles. It is a project aiming at protecting and restoring West Lake with regarding to its geographical space and landscape, including the beautification of environment, ecological protection, landscape restoration, the continuation of the culture, building renovation, water quality control and other aspects. Essentially, it can be regarded as a process of delivering public good of the government.

The implementation of this project not only protects the original natural and cultural landscape and reinforces the capacity of West Lake in undertaking the demand of enormous number of tourists, but also enlarges the available viewing area of West Lake to such an scale that it could easily react to the increase of demand of tourists. As table 1 shows, in this process, new members would be added to the open access family after finishing certain stage of the project.

¹ These scenic spots either belongs to some special public institutions (such as the zoo and the botanical garden), or belongs to important historical and cultural relics protection units, in which the demand has to be restrained.

Economy

Table 1. The West Lake protection and restoration project and the free opening process of West Lake

Time	Contents of the projects	New free scenic spot or not	New free scenic spot
2002	South-line of West lake, Leifeng Pagoda, Wansong Academy scenic area	Yes	Senile Park, Liulangwenying Park, Long Bridge Park, Children's Park and Gushan Park
2003	Yanggong causeway, the New Hubin and Meijiawu Tea Village scenic area	Yes	Winery Yard and Lotus Pool, Hangzhou flower nursery, Viewing Fish at Flower Pond
2004	15 scenic spots including one street, two museums, three gardens, four tombs and five scenic spots	Yes	13 spots, such as Su xiaoxiao tomb, etc.
2005	Su causeway and Bai causeway, as well as the three islands, West Lake Museum, West Lake Research Institute	Yes	West Lake Museum, West Lake Nights, Meilin Han Art Gallery
2006	Firstly The comprehensive protection of Lingyin scenic, secondly the comprehensive protection of Wu Hill scenic and "Eight Views of Dragon Well"	Yes	Wugong Mountain scenic area
2007	The second period of Lingyin and Wu Hill , the recovery of Gaoli Temp, the extension of Southern Song Dynasty Guan Kiln Museum, the protection of Bagua(Eight Trigram) field site, the protection and renovate of Hupao Garden, along Hupao Road and Manjuelongvillage	Yes	Southern Song Dynasty Guan Kiln Museum ,Bagua(Eight Trigram) field
2008	Eight major projects including the Restoration Projects from Nine Rivulets to WaxberryMountain, three monumental projects of "Ten Views of the West Lake"and the optimization engineering of West Lake Nights	Yes	Nine Rivulets scenic area, Confucian temple and so on

2.3. Assessing the effects of the West Lake free opening policy

The free opening of West Lake has generated remarkable effects. First of all,

the tourists visiting West Lake grow rapidly than before. The number of tourists has quintupled from 2,406,200 in 2003 to 12,222,100 in 2008. The figure 1 shows that, different from fluctuating around 18,000,000 before free opening of West Lake, the number of tourists visiting Hangzhou increases constantly after the free opening. Getting rid of the influence of SARS in 2003, the average annual growth rate of the number of tourists increased from 1.37% during 1996-2002 to 5.62% during 2005-2009. Even though suppressed by the Financial Crisis in 2008, the number of tourists immediately restored to a road of growing in 2009. These numbers suggests that on the one hand, the free opening policy has an obvious impact; and on the other hand, the demand of the West Lake has been suppressed before 2002.

As the number of tourists increases, the income of the WLAC increases. The income of the WLAC can mainly be divided into tax, tickets and service incomes, the business income that is mainly making up of transferring the property right of operating commercial outlets to the public, and extra-budgetary incomes. The income of the WLAC increases rapidly after the free opening². We can take the incomes of the public institutions that belong to WLAC as an example³.

²According to statistics of WLAC, during 2003 to 2009, the annual average growth rate of the WLAC's local fiscal revenue was 38.86%, and that of its total fiscal revenue was 34.12%.

³The reason to choose the public institutions as the object of analyzing is because the data about the state-owned firms are not available. Although most of the public institutions belonging to WLAC has been reformed and transformed to firms, the main departments of WLAC, including the management departments of some scenic spots such as Lingyin Temple, the zoo and the botanical garden, and the public service agencies such as administrative departments, are still operating as public institutions. Therefore, the financial status of the public institutions of WLAC should be able to

The income of the public institutions of WLAC mainly comes from the ticket income, business income, entertainment income and other income. Table 2 lists the income of public institutions from 1999 to 2009 in detail. It can be seen that the growth of the ticket income slowed down after free opening of the West Lake. Being taking the significant growth in the number of tourists, there exists invisible loss in ticket income actually⁴. However, other incomes besides ticket income grew substantially. Taking the business income as an example, it is more than tenfold just in seven years. The increase in other income, which is mainly caused by the increase of income from transferring the commercial outlets operating right, deserves even more attention. According to statistics, after the free opening of West Lake, the income derived from auctioning, chartering the commercial business outlets has achieved an average annual growth above 50%, and approaching one hundred millions RMB yuan in 2011. It is obviously and closely related to the increase in the commercial value of the outlets as a result of the increasing number of tourists.

effectively reflect the balance of payment of WLAC.

⁴Regarding how much is the loss of ticket income as a result of free opening policy, there is an estimation proposed by WLAC, ranged from 40 million to 60 million annually. By calculating the per person ticket expenditure (RMB 13.62) and timing it with the total tourist number (128 million) during 2003 to 2009, we estimate that the total loss of ticket incomemay exceed 800 million RMB since the free opening, with an average annual loss over 100 million RMB, even without considering the potential possibilityof rising price.

Economy

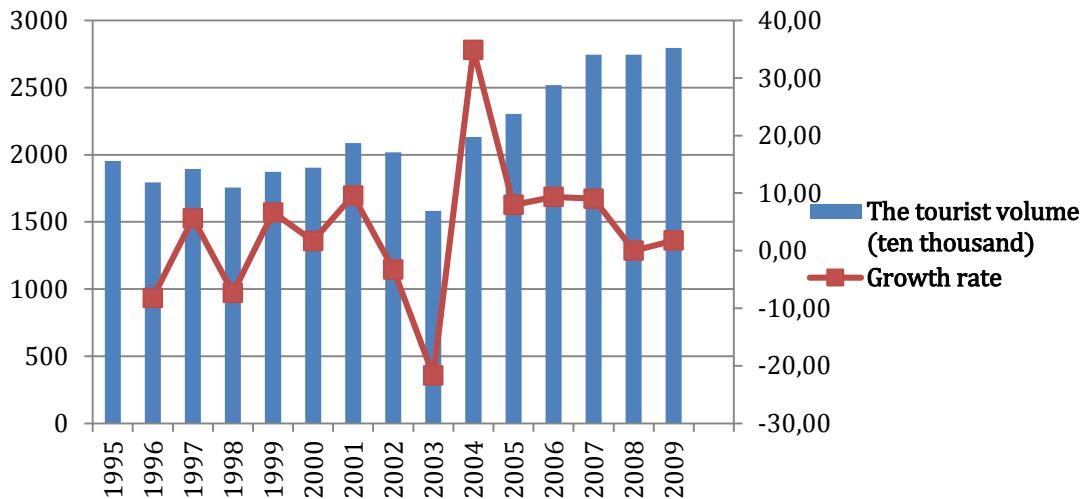


Figure 1. The tourist flow volume in Hangzhou (1995-2009)

Table 2. The income constitution of public institutions (unit: million)

Year	Ticket revenue	Business revenue	Entertainment revenue	Other revenue	Total
1999	97.71	3.56	4.47	20.94	126.69
2000	17879.36	334.76	548.54	2804.58	21567.24
2001	20426.33	515.18	525.99	1842.05	23309.55
2002	20833.8	506.27	323.77	2037.94	23701.78
2003	16743.58	465.27	272.29	2182.36	19663.5
2004	23876.64	345.71	305.02	5349.32	29876.69
2005	25150.17	1015.29	420.37	6175.32	32761.15
2006	24541.24	3209.4	500.78	4352.11	32603.53
2007	25910.34	4358.17	599.56	5541.96	36410.03
2008	25382.1	4130.47	632.98	4800.18	34945.73
2009	24608.43	5249.11	732.4	7079.68	37669.62

However, the cost of protection and maintenance of the scenic area increased sharply as the demand busted out. The congestion effect occurred as the demand approached the optimal scale of the scenic area. In addition to the huge expenditures on

the West Lake Protection and Restoration Project, either the WLAC or its subordinate public institutions has been exposed to a state of deficit since 2003 (see Figure 2 and Figure 3). Therefore, free open policy is clearly not economical from the view of the WLAC.



Figure 2. The income and expenditure of the public institutions of WLAC(1999-2009)

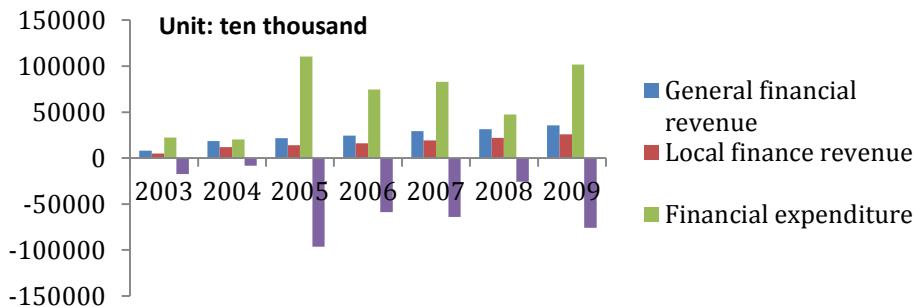


Figure 3. The income and expenditure of WLAC (2003-2009)

However, the free opening of West Lake has brought huge spillover effects on the related industries in the scenic area and further the whole economy of Hangzhou.

In terms of the relevant industry in the scenic area, the growth rate of income increased after free opening just as that of the number of tourists. The income of exhibition, entertainment and commercial service industry, for example, all jumped out of the fluctuation circle and entered into a path of continuous growth (see Figure 4). Compared to that in 2001, the income of exhibition and entertainment industry doubled in 2009, while that of commercial service industry also nearly doubled.

It deserves even more attention regarding the spillover effects on the whole economy in Hangzhou. The most direct effect is that on the tourism industry of Hangzhou.

There is a significant relationship between the income of tourism and the number of tourists. The growth rate of the number of tourist in Hangzhou increased from 3.71% in 1995-2002 to 12.72% in 2004-2010, while the growth rate of the income of tourism rises from 15.91% during 1995-2002 to 17.94% during 2004-2010. Just in the next five years of free opening, more than 20 million tourists had been attracted to Hangzhou and contributed 31.2 billion RMB to Hangzhou tourism, accounting 21% for the cumulative income of tourism five-year revenue, and contributing the tax revenue 8.42 billion RMB which is far beyond that Hangzhou Municipal Government has invested in the West Lake Protection and Restoration Project (53.134 million RMB) plus the estimated loss of ticket income (296.6 RMB) in the same period.

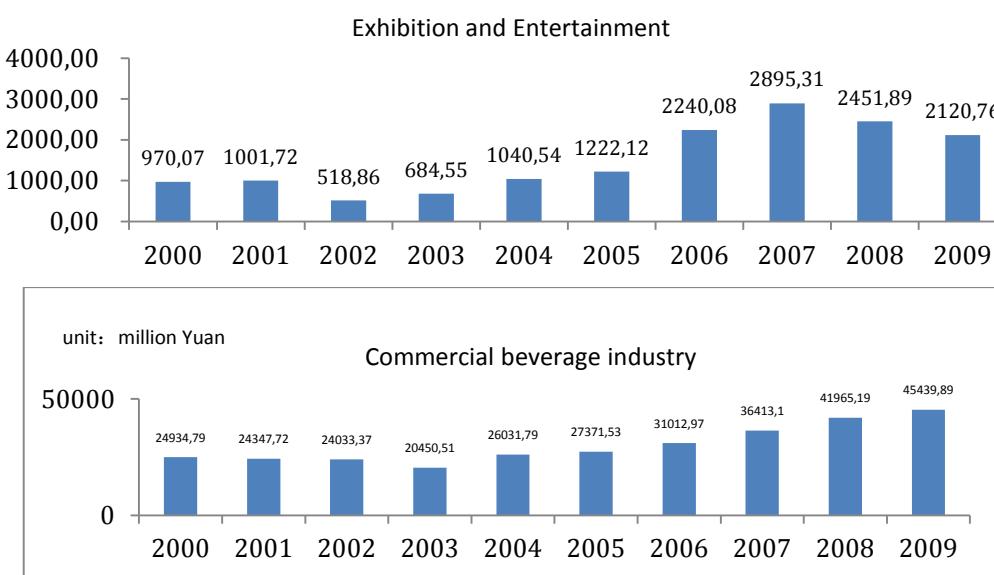


Figure 4. The income of related industries in scenic area (2000-2009)

The related industry, such as transportation, catering and accommodation, as well as retailing other than tourism, are also promoted by the increase in the number of tourist. The most typical example is the industry of Hangzhou dishes and women's clothes.

In addition to the economic welfare, the free opening of the West Lake also brings significant social welfare. It not only greatly promotes the life quality of Hangzhou citizen by meeting the leisure demand of local residents, but also protects the historical and cultural heritage. On the one hand, the free open policy, together with the West Lake Protection and Restoration Project by which more than 180 cultural attractions around West Lake have been recovered, reconstructed and repaired have attracted a large number of city residents to visit. On the other hand, the pricing strategy of "free plus charge" promoted the diversion of tourists, played a significant role in protecting the historical and cultural heritage of the West Lake especially those would felt in danger when exposed to huge demand of viewing⁵.

In a word, if viewing from a broader perspective of the whole city, the free open policy has brought substantially positive externality, even though it also caused some financial burden to the WLAC. It increases the domestic demand, satisfies the local residents' demand of leisure, increases the intangible assets of urban brand in its value, and finally achieves the harmony of economic, social, historical and cultural and ecological system. In the next section, a formal model would be introduced to illustrate the conditions that when would free opening be feasible.

3. Seeking the incentive of free opening - the huge potential positive externality

⁵According to statistics, compared to the numbers before free opening, the number of tourists visiting Lingyin Temple, Yue Fei's Temple and the Liuhe Pagoda decreased to 4.43, 1.35, and 0.47 million in 2010 from 4.75, 1.82 and 1.13 million in 2002 respectively. The free plus charge pricing strategy significantly reduced the operation cost of these scenic spots that have higher operating cost. The experience of such practice in protection created a famous model of protecting the historical and cultural heritages and was carried forward to other areas in China.

The free open policy has brought the consumers about an increase in welfare given their marginal utility along with the free open policy exceeds the congestion cost, resulting in an increasing in their consumption of other items, and thus the growth of the urban economy. However, it's profitable to open the West Lake for free from the perspective of the whole society does not mean that free open policy is welcome by everyone. As the case of West Lake indicated, free opening might be harmful to the direct management departments of the scenic area. In addition to the direct loss in ticket income, they also face a sharp increase of the protection and maintenance cost as the number of visiting tourists bursts out. As a consequence, they surely don't have any incentive to promote the free open process unless they could get enough compensation from other sources, such as transfer payments from government at a higher level. Actually, the government at a high level, i.e. the Hangzhou municipal government, indeed has a strong incentive to issue the free open policy, given the benefit especially the potential positive externalities such as the increase in tax revenue from such a policy exceeds the cost including transferring payments to lower level departments, etc.

Intuitively, the distinguished spillover effects of free opening should be closely related to the unique natural attribute of the West Lake, i.e. the huge capacity. Because of the huge capacity, the West Lake's congestion point comes tardily, and thus its positive externality in economic growth and social welfare has been thoroughly exploited after free opening, which could easily make up for all the costs occurred concerning the government. The case has already demonstrated this point. We can further illustrate it with a simple formal model.

Setting the West Lake as goods i , and other goods closely related to tourism as goods $-i$, suppose they are perfect complements for each other. Accordingly, setting the prices of these two goods before and after the free opening of the West Lake as P_i and P_{-i} respectively, the consumption bundle of consumers before and after free opening of the West Lake as (x_i, x_{-i}) and $(x_i^{new}, x_{-i}^{new})$ respectively, and the consumers' budget constraint as I , then the effect of the price change in i on the change of consumption

bundle could be expressed as that in Figure 5. [3, 4, 5]

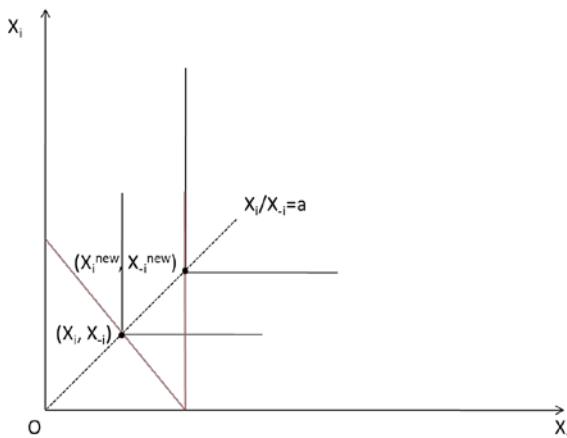


Figure 5. Effect of the price change on the change of consumption bundle.

The slope of the consumer's demanded bundle is a , then $\frac{x_{-i}}{x_i} = a$. It means that consumption of every 1 unit of goods i would require a complement of consumption of a units of goods $-i$. The bigger is a , the huger the externality of consuming i concerning the demand of $-i$. It is obvious, as the longer a consumer stays in the scenic area, the more demand of other goods or service occurs, such as foods and accommodation, and thus the huger the externality.

And the original constraint conditions are:

$$\begin{cases} P_i \cdot x_i + P_{-i} \cdot x_{-i} \leq I \\ \frac{x_{-i}}{x_i} = a \end{cases}$$

Solving the utility maximization problem, we have:

$$\begin{cases} x_i = \frac{I}{P_i + aP_{-i}} \\ x_{-i} = \frac{aI}{P_i + aP_{-i}} \end{cases}$$

And the final constraint conditions are:

$$\begin{cases} P_{-i} \cdot x_{-i} \leq I \\ \frac{x_i^{new}}{x_{-i}^{new}} = a \end{cases}$$

In the same way, we have:

$$\begin{cases} x_i^{new} = \frac{I}{aP_{-i}} \\ x_{-i}^{new} = \frac{I}{P_{-i}} \end{cases}$$

Let t represent the tax rate, C_i and C_{-i} represent the unit cost of goods i and $-i$ respectively. Then the free open policy is profitable for the government if and only if the potential benefits generated from free opening are not less than its cost; that is:

$$t(P_{-i} - C_{-i})\Delta x_{-i} \geq C_i \cdot \Delta x_i + P_i \cdot x_i \quad (1)$$

Plug x_i, x_{-i} , x_i^{new} , x_{-i}^{new} into the inequality (1), we obtain:

$$t(P_{-i} - C_{-i}) \geq \frac{C_i}{a} + P_{-i} \quad (2)$$

Then we have:

Proposition 1: Inequality (2) is the sustainability condition. Under this condition, the free open of West Lake is sustainable.

Obviously, the larger is a , the more possible that the inequality (2) would satisfy, holding other things constant. In other words, the greater the externality of open access, the more it is sustainable.

However, the government would not be necessary to issue the free opening policy even though it's profitable to do this. As Supposed that the local government plays as the role of institutional entrepreneur, then we will have the condition that the revenue maximum government is willing to put forward the free open policy:

$$t(P_{-i} - C_{-i})\Delta x_{-i} \geq t(P_i - C_i) \cdot \Delta x_i \quad (3)$$

Solving the inequities, we can obtain:

$$\frac{(P_{-i} - C_{-i})}{(P_i - C_i)} \geq \frac{1}{a} \quad (4)$$

When both of the inequality (2) and (4) are satisfied, the free open policy is not only possible, but also feasible.

However, the story writing here just has the possibility. Starting from here, another key problem also need to be considered is that whether the government could find a proper feasible way to institutional change, making the cost of institutional change as low as possible so as to keep the final benefits in positive. It is of special importance to balance the interests of different parties, and turn the resistance of whom their interests are impaired by the institutional change into motivation of participating in reform. In Hangzhou, this kind of institutional change finally comes into reality due to the efforts of public entrepreneurs at the municipal level who are good at finding institutional innovation profits. The key in this process lies in the establishment of West Lake management committee and a series of financial institutional arrangements. The former provides an organizational structure with a relatively lower transaction cost in internalizing the positive externality, and the latter offers the incentives of various departments in the process of internalization. In the following, we will make an analysis in the two aspects relatively.

4. Internalizing the positive externality: organizational construction and incentive mechanism arrangement

4.1. Establishing the management committee of the West Lake

Any resource allocation mechanism has its advantages and disadvantages. It is inefficient when the establishing and operating costs exceed the possible benefits of institutional change.

On the other hand, any institution can't operate without organizations. Especially, as the expansion of the division of labor and specialization, individuals seldom deal with all the suppliers of wanted goods or services every day, because the transaction cost is too high. As a result, organizations, such as governments, enterprises and societies, are set up by the individuals sharing the same object and become the leading role of various actions in society[6].

Like institution, organizations serve a framework for individuals' interactions. Obviously, the present institution has a great influence on the emergence and formation of new organizations, as they are formed within the set of opportunities determined by constraints, including institutions, construction of society, technology, and preference etc. However, once organizations come into being, it can be the key actor in institutional changes, whether boost or block. Every organization has its own objects, and will choose actions within present constraints or try to change the constraints chasing for its favor [7]. Especially, when the benefits from changes can cover the costs brought in by changes, then incentives of organizations for changes will work. The institutional entrepreneurs who lead the organization play an important role in this process. Therefore, the organizations and institution are interactive, symbiotic evaluative.

Although organizations are established to reduce the transaction cost, the organization itself will incur cost in operation. When the operation cost exceeds the transaction cost, the organization is inefficient. Even for its own interests, the organization will then take actions to block institution changes. Therefore, good organizational construction is the key factor to make resource allocation mechanism run efficiently. Well-constructed organization not only could reduce transaction cost, but also

could initiate institutional innovation, while rigid-constructed organization not only would incur huge organization cost, but also would block institution innovation. As the most innovative area of private economy in China, so a series of institutional innovation in local governance have sprung up in Hangzhou, including the practice of free opening of the West Lake.

Before the free opening, the West Lake is managed by several different departments, of which the most important parts are Hangzhou gardens bureau of cultural relics and Hangzhou West Lake district government and its subordinate West Lake streets. Among them, the City Garden Bureau of Cultural Relics (short for GBCR hereafter) is responsible for daily management of each park scenic spot, and the Hangzhou West Lake district government and its subordinate street office is in charge of general common affairs, such as land transfer, public security, environmental protection, cleaning. Anything involving scenic residents' daily management is responsible by West Lake Streets. These organization in addition to the direct management departments of each scenic spot make the organizational arrangements and the interest relationship rather complexes. In order to change this condition, and reduce the resistance of the introduction of free open policy, Hangzhou municipal government integrated all the relevant departments together into a department, named the West Lake Administrative Committee.

According to Administrative Regulation on the West Lake Scenic Area, WLAC is directly responsible for the management of the scenic area, and established as an M-type organization. On the one hand, WLAC shared the staff with GBCR, and setup several functional departments including planning and construction, forestation, culture relic protection, finance and taxation, industry and commerce, public security, land management, environmental protection, religious affairs, etc., which also directed by the corresponding municipality departments respectively, and performed all the specific functions of management. On the other hand, the WLAC established an assorted management structure. At the basic level, the whole scenic area of West Lake is divided into nine scenic areas, each managed by an administrative office. Meanwhile, the WLAC is also entrusted

to manage the West Lake street and its subordinated 12 villages. That is to say, instead of in charge of related issues of protection and maintenance only, now WLAC, i.e. GBCR, won all the authority and public affairs functions of a district government.

Meanwhile, the committee is an independent economic entity, on one hand it can manage

public scenic spot through each subordinate independent institution (such as Flower Pond management office, the zoo, etc.), on the other hand it can also carry out the relevant business through the subordinate enterprise (such as the cruises company, Hupanju teahouse, etc.). Figure 5 shows the organizational structure of the committee.

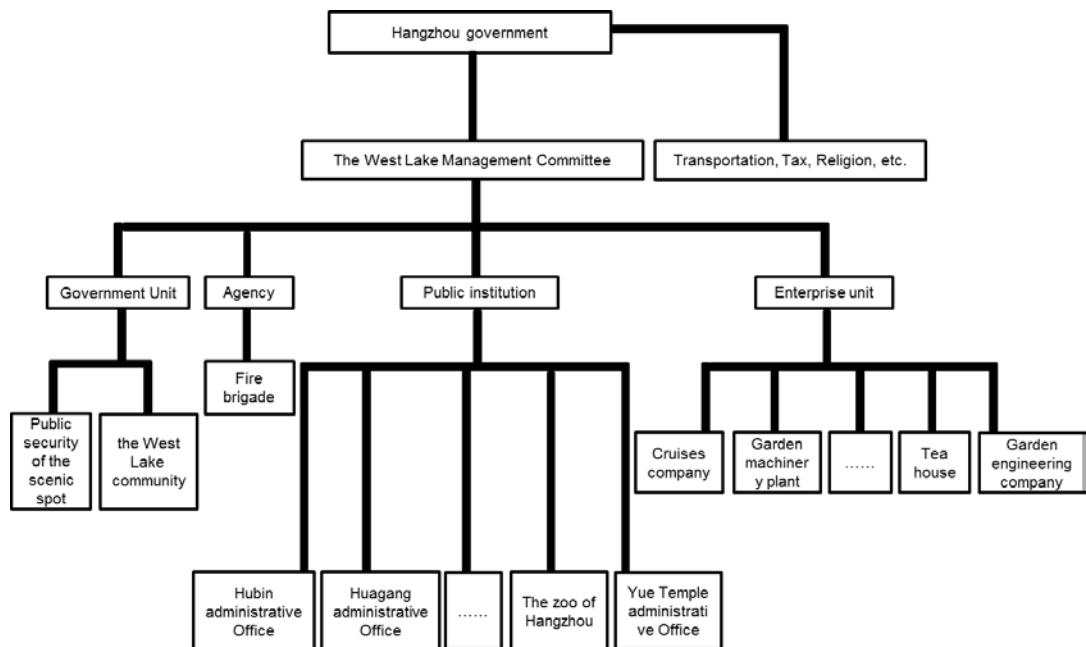


Figure 6.The organizational structure of the West Lake Administrative Committee

Under the circumstances of integration, while the Hangzhou municipal government promoting free West Lake policy implementation, it can negotiate with WLAC directly instead of doing the bargaining negotiation with every sector scattered all around, thus reducing the transaction cost. Meanwhile, after the government integrating all the administrative departments and institutions related to West Lake, because of the positive innovation acting of the organization construction, the cost of WLAC does not increased significantly.

First of all, different from the traditional vertical type organization, the committee approaches the form of flattening organization structure so as to reduce the cost of operation organization. Except of the structure of WLAC itself, the most typical flattening organization of WLAC belongs to the travel service subsystem and settlement subsystem established by it. Tourism service subsystem is built with four level configuration: Hangzhou main urban zone

(travel service base) –first-class tourism service point in four places (service radius is three to four kilometers) – second-class tourism service point in 16 places (service radius is one or two kilometers) – all that is scattered in the third-class tourism service point of various attractions, to enhance the scenic area tourist service function around this configuration. Settlement subsystem is formed in a three level configuration: the West Lake scenic spot (the basic government); the nine communities according to the division of the scenic area expansion; the seven city habitat settlements, twelve villages in living point. Based on the original organization basis, these subsystems can be more effective to deal with various affairs with each other, with a more convenient, close and more flexible mutual contact.

Secondly, in order to promote the development and protection of West Lake , we should regulate the relationship between each internal management department, make use of the merger, outsourcing, franchising,

conversion, etc., various kinds of operation mode, build the composite restoration projects on the West Lake scenic area, integrate all kinds of power and resources not only of government, but also of the market and society, lower the cost of organization operation. After the establishment of the committee, in accordance with the different types of scenic spots and tourism service agencies, the WLAC has implemented an effectively classified management: Charging fees tourist attractions such as Yue Temple, mostly run in the form of independent institutions; and the free attractions zones are always attached to a certain business unit, all by its authorized management. Those units who are directly under their jurisdiction are responsible for the daily management, such as maintenance, cleaning, security, etc., and the committee implements the two-line income and expenses management by the principle of balance allocation. As for some other charging items, more close to personal items, such as the boats on the lakes, teahouse beside the lake, etc., the committee does as the enterprises management do, with the direct introduction of market mechanism. During the process, through the integration of originally scattered in various departments of the related assets, and the more professionally durable investment, (such as establishment and garden maintenance company), the committee saves a part of the transaction cost imperceptibly and makes the efficiency of resources usage improved.

Apart from the self-operating department, the committee also permits some small projects by the way of franchise. Based on the principle of separating the ownership, management and operation, introduce the market main body (including enterprises and institutions, a natural person) by inviting bids and public auction, take the place of government in developing these projects. The cost of landscape maintenance and construction can be supported by rental income and daily tax. The bidder auction of commercial network operation surrounding the tourist attractions is one of the typically examples.

Additionally, through the extensive and vast volunteer actions, the committee has made great efforts on calling for social forces to participate in the protection of the West

Lake daily management work. Based on the "Protect the West Lake Green Action" originated in 1993, in 2004, the committee took the West Lake volunteers into a unified management, in the establishment of the West Lake Volunteer Service Corp. Under the Service Corp, there are holiday tourism teams, drug control teams, sunset volunteer teams and mountain protection teams adding up to 16 service teams, which contain 12 volunteer service bases and 10 signed universities. All the groups and teams are under the control of the West Lake scenic spot communist (City Garden and Culture Bureau), in the direct financial support of management committee. According to statistics, after integration, volunteer service shows an obviously growing trend. In 2010 alone, there are 460,000 volunteers participating in the activity, providing more than 2.76 million hours volunteer service for the domestic and foreign visitors.

In conclusion, through the WLAC, Hangzhou municipal government laid a preliminary foundation for the implementation of the free West Lake policy an organizational operation platform, and also makes it clear about the object in the interest balance and redistribution from a comprehensive consideration. Then, in the following, the key lies in how to realize the coordination and balance of interests, and the construction and implementation of the incentive and restraint mechanism.

4.2. The financial arrangements and incentive mechanism of WLAC

The analysis above shows that, if there is no superior government financial transfer payment, WLAC will be unsustainable under the free open policy of West Lake. Figure 3 clearly shows that, the committee is almost in a state of not making its ends at the very beginning of establishment. The massive fiscal expenditure on the one hand in that, meeting the needs of the implementation of the Restoration Projects on the West Lake scenic area and other scenic area, on the other hand, dealing with the vast expenditure increase of many aspects such as clean sanitation, scenic spot maintenance, safety management the surged visitors brought. Therefore, subsidies is must and should be proposed, otherwise the free open policy will become a mere formality, or go into bankruptcy resulted from the great resistance of the damaged groups.

In fact, at the beginning of the establishment of WLAC, the Hangzhou municipal government has realized and has been clear about the tax-distribution financial management system in West Lake scenic area. At first, the municipal government is determined to offer fixed subsidies for 42.35 million RMB, divided into revenue base 82.8 million RMB, shared 40% of increased revenue. It can be seen that, the base number of incoming and outgoing is very small, fixed subsidies account for the handing in (dividing revenue base 82.8 million RMB) more than 51%, which apparently illustrates that the municipal government willingly redistributes benefits through a "subsidy type financial" at the beginning.

The higher government subsidies mainly in the form of authorizing the provinces and cities subsidies and call in capitals

(including non-budgetary income and other transfer internal capital). Table 3 tells us specific subsidies amount in the year 2003 to 2008. If count on the investment of the Restoration Projects on the West Lake and other kinds of special input, the amount is much greater. According to statistics, between the year 2003 to 2006, every year the investment of Hangzhou municipal government to the West Lake scenic area is as high as 800 million RMB, including 300 million RMB spent in specialized greening maintenance, 100 million RMB in the protection of cultural relics, 250 million RMB in West Lake comprehensive protection fees, and 150 million RMB in daily operation. Without the doubt, the superior financial aid and transfer payment influences greatly to the committee normal operation.

Table 3. Administrative committee available sources of funding (unit: million)

Year	Local financial revenue	Provinces and cities subsidies revenue from province and cities	Transferred capital
2003	4769.00	9190.00	4364.00
2004	11870.00	11493.00	7190.00
2005	13902.00	7063.00	7190.00
2006	16010.00	66083.65	9258.22
2007	17615.00	9195.03	7916.80
2008	21900.00	9765.56	13352.37

Besides the macro financial system, the committee itself spends a lot of efforts to internal incentive mechanism, constructing a new system under the framework of the new incentive frame work.

Similar to the financial transfer payment sponsored by the superior government, the committee interior also has the quota subsidy regulation targeting to the grass-roots units, according to the "notification about 'for part of the unit executing budget management policy reform' " promulgated in 2008, the committee launched the practice of "quota turning over" and "quota subsidies" system among each subordinate business unit, the fixed subsidies base for whose was 37.4924 million RMB.

Meanwhile, the committee also devoted to "improve assessment system, take the long-term management work into each unit year-end appraisal target, and implement a ticket overruled make." The committee asked subordinate ready to

accept the mission sent to them, and at the same time, requested of their behavior must not exceeding the "licensing scope" in the contract. This in essence inherited existing authoritative system characteristics, and restrained subordinates' body and employee behavior through the system internal existing potential constraint in contract. Thus, under the situation of the largely promotion of work quantity and difficulty, it realized the high efficiency in decision-making and execution.

But it is worth noting that, in the basis of authoritative system, through the fusion government, enterprise, business, these three kinds of social organization form, the committee is going toward composite subject, a new organization form. In the new organizational structure, the committee makes the corresponding adjustment in incentive structure, in order to realize incentive compatibility of the new environment, which typically embodied in the

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arrangement of incentive mechanism in the arrangement enterprise units.

To the institution staffs who directly assume the management of the scenic spots, the changes brought by the free open policy cannot be ignored. Under our current system, institutions are equivalent to governmental entities with certain independence. Their income mainly comes from government funding. They also have a certain ability to operate independently. For these institutions which are between government and business, they need to keep the existing relations to ensure efficiency, and add new systems to ensure the operating performance of the business part. Thus the WLAC has established internal fiscal transfer system to redistribute departmental interests, linking staffs' income to the economic performance. In this way, the difference between the expected rate of return of individuals and organizations will be as small as possible. That means they have enough incentive to fight for the economic performance of the entire organization. For example, the provisions of the per capita annual prize of 18,000 base linked to the part of the leadership and staff bonuses and income amount (those accounts for income over last year 15% of the income accounts), and give subordinate units to certain welfare payment autonomy.

For organizations that are similar to corporation, the committee makes market-friendly reforms to realize compatible internal staff incentive. In short, through the establishment of this series of targeted incentive system, the committee ensures the motivation of the subordinate officers in the course of their work, thereby ensuring the efficiency of the implementation of the scenic area management.

5. Conclusions

Back to 2002, the free open of the West Lake was a tentative move. For the past 10 years, however, it continued to boost local development and is increasingly viewed as a paragon in providing public goods. Our study of the case not only serves as an inspection of the economic theory but also provides instructive results which enable further discussions and practical suggestions.

First, the increment in social welfare brought about by free public goods is subjected greatly to the optimal consumption scale. It actually determines the potential social welfare (especially positive externality) after the free provision of public goods and further more determines the potential benefit of institutional transformation. This can be part of the reason why some scenic areas tried to cancel the ticket but

ended in failure: we soon meet with the inflexion point of cost. Upon the same basis, we could explain why a mix pricing strategy is adopted in turning the West Lake free. For scenic spots with rather limited capacity, the critical point comes much sooner. Thus they'd better maintain the charges.

Second, institutional transformation is often a process of interest redistribution. Any newly enacted policy may harm the interest of certain groups as well as benefit some others. People who gain from the change have the incentive to promote it, while those harmed do not. Therefore, whether an institutional transformation can occur is greatly affected by the comparative bargaining power of the two sides. In this sense, when institutional change is to happen in an authoritarian system, it is often critical to benefit the authorities as they play the role of key actors. That they are motivated will surely help to bear the initial cost of institutional change and to balance different interest with effective redistribution.

Third, success of the institutional transformation depends largely on the design of institutional framework, especially that the incentive constraints under the new framework should be incentive compatible with different agents. System operation is not free, its cost related with the acceptance of different interest groups for the new system. When the cost exceeds its gain, institutional innovation staggers and may even tumble. Therefore, initiators should be enough tactful in pricing and interest redistribution as to turn every participant an enthusiast for the institutional change.

Forth, the cost of system operation can be reduced by well-designed organizational structure, therefore to maintain as much as possible the benefit of system innovation. Organizations (including their members) are key actors in regulation enforcement. Like institutions, they set up the basic code for interactions between individuals. A well-designed organizational structure could interiorize the positive externality with low cost, thus helps to avoid profit dissipation of the system innovation. It has been proved, that during this process, organizations with mixed structure of bureaucracy and decentralized departments become increasingly favored [8]. This kind of organization overcomes the drawbacks of the two extreme organizational settings. They are both flexible and resilient, allowing competition as well as cooperation. They know how to perform well in the short run and are equally good at long term planning. The government of Hangzhou, when making the

organizational design for a free West Lake, has very likely taken this into consideration.

References

1. Buchanan J.M. (1965) An Economic Theory of Clubs. *Economica*, 32(125), p.p.1-14.
2. Klar L.R, Rodman C. (1984) Budgetary and administrative impacts of tax-limiting legislation on municipal recreation and parks departments. *Journal of Park and Recreation Administrative*, 2(4), p.p.31-44.
3. Samuelson P.A., Nordhaus W.D. (2005) *Economics*. McGraw-Hill/Irwin: New York.
4. Mankiw N.G. (2012) *Principles of Economics*. South-Western Cengage Learning:Ohio.
5. Varian H.R. (2005) *Intermediate Microeconomics*. W. W. Norton & Company:New York.
6. Coase R.H. (1937) The Nature of the Firm. *Economica*, 4(16), p.p.386-405.
7. North D.C. (1990) *Institutions, Institutional Change and Economic performance*. Cambridge University Press:Cambridge.
8. Das T.K., Teng B.S. (1998) Between trust and control. *Academy of Management Review*, 23(3), p.p.491-512.

