

TOWARDS THE SUSTAINABLE CONSTRUCTION LABOR MARKET IN CHINA: FACILITATING SUBCONTRACTOR'S DEVELOPMENT

An Tingyu and Watanabe Tsunemi
Kochi University of Technology

ABSTRACT: The practice of employing labor through intermediaries or labor contractors (referred to as labor subcontracting) is a long established practice in the construction industry. It has also developed rapidly in the Chinese construction industry following the institutional reform in 1984 entitled Separation of Management from Field Operations. It has brought some advantages from contractors' view point, such as flexibility in the use of labor and an opportunity to reduce labor costs. However, it has the potential for labor exploitation, which does take place in recent China in view of widespread labor right infringements such as wage arrear, safety and health problems, little social welfare, and so on. Therefore, it has come to be regarded as a big problem to be tackled for China. This paper goes on to explore the implications of labor subcontracting for the Chinese construction industry from the economic and social perspectives. The causal analysis on the current issues of construction labor market is done by referring to practical experience of one Chinese construction general contractor in China. The deep reason of construction labor issues is found to be rooted in current subcontracting systems with an excessively restriction on subcontracting layers and scope. It results in the disciplined labor provision business and underdeveloped labor subcontractors with no promising future. Inspired from the Japanese partnership mode as Affiliated Companies by case of *Kajima*, one approach to develop the subcontracting market could be establishing long term work relations between general contractor and subcontractors. It could not only facilitate the better ongoing development of subcontractors, but also realize the highly industrial specialization and improvement of labor employment. It may serve as a basic contribution to the reform and development of Chinese construction labor market aiming at the respect to human and harmonious relationship with the society.

KEYWORDS: migrant labor, labor contractor, affiliated companies

1. INTRODUCTION

The rapid pace of change in the construction industry worldwide presents new and urgent challenges, such as balancing the social and environmental needs, creating more productive, healthy, and safe ways for working, conserving and sustaining natural resources and reducing vulnerability to natural hazards, and so on. It calls for innovative thinking on the industrial

development. Recent studies have attached an increasing significance to the idea of sustainable construction, which is generally acknowledged to have the three pillars as economic sustainability, environmental sustainability, and social sustainability. The former two have now broadly been understood and aroused much attention in recent years. However, the concept of social sustainability seems to be much more difficult to grasp in practice. It could be

interpreted as social responsibility to some extent. It is about minimizing the negative and maximizing the positive effects that economic activities have on people and society, involving three levels as labor force, local community, and global community. With regard to construction industry, a big component of social responsibility is undoubtedly its labor force.

Concerning construction labor market, there are basically three involved issues as the source of labor, the basis on which it is employed and the way it is treated. It is commonly acknowledged that on the one hand, those issues related to labor in the construction industry have profound implications for project quality, productivity, skill development and so on, which are certain to be the immediate concern of the involved parties regarding their relevant economic benefits. On the other hand, such issues as the number of jobs, the systems under which construction workers are employed and managed, as well as their working and living conditions can affect the achievement of social objectives such as the alleviation of poverty and promotion of social stability and harmony. Particularly, in most developing countries that have a surplus rural labor, the construction work has more significant meaning for them since it often acts as the only alternative for those rural laborers who are not much educated. Therefore, the development of construction labor market should be of high priority from both economic and social perspectives.

Unfortunately, referring to many countries' experiences amid the development of construction industry, its social responsibility is prone to being neglected or even sacrificed when confronting with economic benefits. It can be seen from the universal existence of exploitations on its labor force, such as low wage, long work hours, poor conditions of occupational healthy and safety (OHS), insecurity

of employment, and low rate of social insurances, and so on, which becomes severe in recent China. It shows us not only the deterioration of labor force for current and future Chinese construction, but the failure in the realization of a socially responsible construction that is supposed to enhance the positive aspects of employment and protect its labor force from negative ones. This paper aims to explore adaptable measures that can be applied to the development of Chinese construction labor market integrating economic and social perspectives. It has significance for current China that has a surplus rural labor force mainly involved in construction works.

2. RESEARCH OBJECTIVE

The challenge is not only to find remedy that will cure the deteriorated construction labor market but to build the future construction labor force as well. Supported by the cases of China Railway 12th Bureau Group Corporation (CRGC-12), and *Kajima* Corporation of Japan, this paper is trying to

- 1) explore the construction labor issues amid the development of construction industry in China;
- 2) analyze the unsatisfactory progress of recent scheme for regularizing the construction labor market in China, of which the side-effects are specially examined to identify the root causes;
- 3) seek for the promising practice for building the future construction labor force; and
- 4) put forward the appropriate strategy for sustainable development of Chinese construction labor market combining the practical situation.

3. PROBLEM FORMULATION WITH REGARD TO CONSTRUCTION LABOR MARKET IN CHINA

Any useful prescription depends on the accurate diagnoses, indicating the necessity of exploring the status quos of Chinese construction labor market to formulate problems. Since the Reform and

Opening-up Policy in 1978, Chinese construction labor market has undergone big changes, involving the source of labor, the role of general contractor in relation to subcontractor with an increasing practice of labor outsourcing.

3.1 Status quos of construction migrant laborers and their poor conditions in China

As is known, the functioning of construction industry generally consists of two aspects in most countries. Those are not only its contribution to the development of national economy and people's standard living, but also its role in absorbing labor force as an effective employment measure. In China, the expansion of construction has already been a leading contributor to the Chinese national economy, and brought a boom in the number of construction laborers, of whom more than 80% come from rural areas, named "migrant laborers". In China, migrant laborers particularly refer to as those rural surplus laborers who come to urban areas to make a living rather than farming in the countryside. Contrary to the glorious achievements in the construction sector, the working and living conditions of its labor force are extremely miserable (Figure 1).

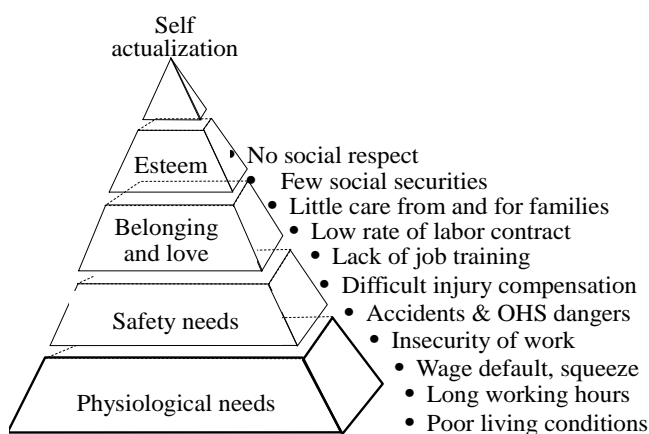


Figure1 Hardships of construction migrant laborers

According to Maslow's Hierarchy of Needs, the most imperative need is the main driving force for human actions. However, even the basic needs of

construction migrant laborers have not yet been sufficiently met. Many construction laborers are exposed to unnecessary dangers concerning safety and health, largely due to the insufficient protective measures. Employment for construction migrant laborers is usually insecure since the majority of them are recruited through intermediaries or labor contractors (named "baogongtou" in Chinese) on a temporarily basis and dismissed when they are no longer needed. Migrant laborers are frequently found to be badly paid (such as low wage, payment default, intermediaries squeeze, and so on), let alone their families. Sometimes, part of their wages is withheld, through which labor contractor's burden on retention is passed down to its labor force. They usually have to work for long hours and often are forced to work overtime without additional payment. Most of them are not accessed to social insurances such as medical insurance, pensions, or other benefits (table 1).

Table1 Participation rate of social insurances among migrant laborers in China (%)

Sectors	Pen sion	Occupat ional injury	Medi cal	Un emplo yment	Mat ernity
Manufacture	8.8	27.5	14.7	4.2	2.4
Construction	1.8	15.6	4.4	1.0	0.6
Transport & post	10.7	27.2	15.4	6.1	3.5
Retail	6.1	11.6	8.3	3.1	1.8
Accommoda tion	3.6	11.7	7.1	1.7	0.8
Service	4.8	14.2	9.4	2.7	1.6

Source: 2009 investigation on migrant laborers

In most cases, the miserable situations of migrant laborers are ascribed to "baogongtou" in view of its direct relationships with most construction laborers on site. However, the recent regulations on rigid prohibition of using this kind of informal teams and positive promotion of formal labor service enterprises (LSEs) by the Chinese government have been proved to be failed, at lease far from

satisfactory progress as expected, in view of the detailed implementation on construction sites. Reasons behind need to be examined with a more rational response to the seemingly “notorious” *baogongtou* based on better understanding of its situation in the construction market.

3.2 Explanation of construction labor issues from institutional and organizational levels

This section first outlines the shifts in the basis that the construction laborers are employed on, including changes in the employment system and construction production systems. Concurrently, analysis on the root cause of current undeveloped construction labor market with undisciplined labor provision business is done supported by practical experience of CRGC-12.

3.2.1 Reform and restructuring of construction enterprises

Most large and medium-sized construction enterprises in China had been state-owned establishments under the traditional planned economy system. One important goal of economic reform in China was to allow those state-owned enterprises to be more market driven. Along with the state-owned enterprise restructuring, permanent employment under Centralized Placement System was gradually substituted by optional employment under Labor Contract System. As a result, a number of construction laborers were gradually dismissed from most state-owned construction enterprises into optional employment labor market, while technical and management staff members were maintained. It subsequently led to the separation between technical and management layer and labor-service layer regarding construction management. Consequently, since most large and medium-sized construction enterprises have gradually focused on the techniques and management issues, it becomes necessary for them to find capable and trustful collaborators who

can provide with good laborer-service and take charge of concrete construction work on site.

3.2.2 The overall construction production systems with labor supply business

From above, it could be noticed that construction labor-service has gradually been separated from previous construction businesses, and formed as a new business. Along with the overall construction industrial structure readjustment in China, the status of this newly developed business has been clarified and confirmed in the whole construction market.

(1) The new construction license system

Since the 1980s, China has gradually introduced Tenders and Bids System into construction projects. Under this system, a general contractor (GC) usually estimates the total cost for building a project and places a bid or estimate on the entire project. In turn, subcontractors (SCs) offer bids for their services and are hired by GC based on those bids and their professional reputation. This system is universally adopted in most construction projects in China now, in which a number of laborers, artisans and professionals are supposed to complete the specific tasks that they specialize in as subcontractors. As a result, relationship between general contractor and subcontractor tends to be a critical element to assure a smooth building process of construction projects.

Concerning subcontracting business scope, there are two categories of subcontractors according to current Construction License System. One is professional contractor (PC), and the other is labor-only contractor (LC). The latter has not been put forward formally until the new Construction License System was established in 2001. According to current regulations, LC can only make a contract with GC or PC regarding labor provision business rather than other engineering works.

(2) Contracting relations in principle and practice

In China, subcontract of engineering works again is strictly forbidden according to current laws on Tenders and Bids. The legal contracting relations under Tenders and Bids systems should be as shown in Figure 2 in principle; however, the practice of multi-layer subcontracting exists on construction sites widespread with insufficient site supervision, vague responsibilities for involved parties.

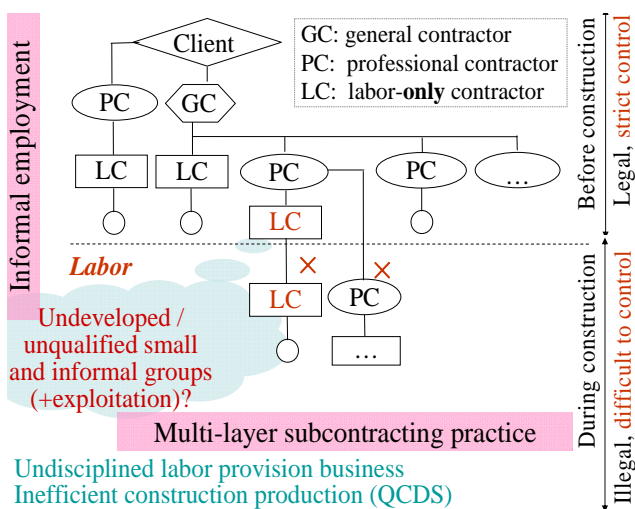


Figure 2 Contracting relations of construction production in principle and in practice in China

As shown in Figure 2, labor-only subcontracting positions at the most fundamental layer. As a newly separated business as labor provision from those conventional construction businesses in China, labor service market is far from well developed yet with undisciplined trades, mostly done by small and unqualified informal labor service groups or teams. Numerous problems closely related to this business arise in practice due to insufficient capabilities of labor subcontractors, such as frequent construction accidents, jerry building with poor quality of projects, infringement of migrant laborers' rights, and so on.

3.2.3 Notorious *baogongtou* and its unpromising alternative

Recent studies in China described the central role of

labor contractor, known locally as "*baogongtou*", who is the head of the working team with laborers usually coming from the same rural area. *Baogongtou* exerts profound influences on the labor provision business and the lives of construction workers. Through joining an informal team led by a *baogongtou*, the laborer is provided with an opportunity to obtain work and acquire skills, which can lead to higher income to some extent. However, this opportunity is mostly denied to those without family and social connections with *baogongtou* that are needed to join the team. Thus, it is regarded to post a barrier to training and innovation. Even worse, frequent construction accidents and labor payment default have been universally reported with an indiscriminate blame on *baogongtou*. As a result, *baogongtou* is generally considered to have negative connotations in China, which precipitated the Chinese government to prohibit the informal *baogongtou* and promote the formal labor service enterprise (LSE) as an alternative in 2005. However, due to the excessively high barriers and stiff criteria of the establishment of LSE, labor subcontracting enterprises have not matched expectations in terms of development (Figure 3).

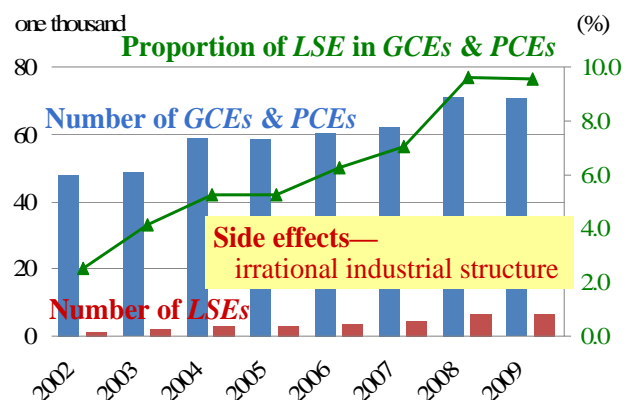


Figure 3 Unsatisfactory development of LSEs

Many such enterprises seek a higher level license under current construction market, thus there is a huge imbalance in the number of general contractor

enterprises (GCEs), professional contracting enterprises (PCEs), and LSEs, leading to an irrational industrial structure. This is unlike normal business practice in the construction industry, and policies and regulations may need to be reassessed and adjusted accordingly. In a word, the applicability and effectiveness of this enforcement may be reserved for further consideration regarding the unsatisfactory progress of implementation. Most project managers admit that “illegal” *baogongtou* remains to abound on most construction sites in disguise since it is preferable to formal LSE under current labor subcontracting market, according to investigation in CRGC-12. Until now, general contractors complain that the subcontracting market is too disordered and deficient in supplying with qualified subcontractors with laborers and specialist skills; meanwhile, *baogongtou* as well as LSE complain that they could not see any promising future under current insecure and non-incentive business environment. It could be understood consequently that the fundamental improvements in laborers’ conditions have not been available yet.

Schemes for improving the laborers’ situations including welfare have also been devised in other countries like Egypt, India, and Korea, based on the acknowledging of laborers’ temporary or casual status. Most of those schemes illustrate that the policy direction should be moved to accommodate the needs of construction laborers without requiring a fundamental change in the way laborers are recruited and employed. It reveals that the prohibition of *baogongtou* and excessive restriction of subcontracting systems in China may be one-sided with ignorance on labor contractor’s further development like becoming a specialty contractor or even general contractor, and ignorance on their functioning of building a social bond to some extent. Although the latter argument should not

be carried too far, it is important to recognize *baogongtou*’s close relationships with labor groups.

Therefore, fresh thinking may be needed, not only focusing on external and forcing changes in labor contracting organizations. What mentioned above argues that the rigid intervention by government can not achieve a sustainable and effective solution, in turn may have negative side effects. A more rational response may argue that any scheme that is inappropriate only when it does not fit the reality, or lack of set of conditions to ensure its performance. Actually, informal labor employment and MLSS have rationality of existence seen from other countries’ experiences. The critical for improving current situation of Chinese construction labor market may lie in how to promote construction management combining both organizational and institutional views, in this case, how to facilitate the better ongoing development of LCs even PCs (mostly SMEs) to be integrated into the construction production systems with good performance. In a word, to facilitate the subcontractors’ development with a focus on labor-based technologies is critical to both the adjustment of construction industrial structure and the improvement of laborers’ conditions with a possible soft landing for future.

3.3 Deficiencies in the development of labor contractors under current subcontracting market

The immediate cause for underdeveloped labor contractors lies in the principle of cost based selection under current competitive labor contracting market, which makes it possible for the undisciplined labor contracting behaviors, with a heavy blow on the positivity of those trades with integrity. While deeper reason is supposed to be related to the institutional deficiencies in the current subcontracting systems.

Since labor-service subcontracting business is newly developed business and becomes paralleled with professional subcontracting business in China recently, the existing laws have not yet specific regulations on it, and the legal status and future of LSEs seem to be very vague. Situation perhaps is much worse if taking consideration on the excessive restriction on subcontracting layers and business scope under current subcontracting systems. It is regarded to pose the obstacle to better on-going development for those small and medium-sized subcontractors in construction market, and ultimately to achieve the highly specialization under a rational construction industrial structure.

Seen from the experience of Japan, multi-layer subcontracting systems (MLSS) have been adopted widespread, and subcontracting of the labor-service only is forbidden in Japan. Under MLSS, an interdependent construction market has been developed, composed by a small number of top class general contractors who have overwhelming advantages in technology and management, and multiples of competent professional contractors who have superior operational skills and proprietary construction technology. In 1999, the proportion of professional contractors in Japan was already more than 70%. In a word, MLSS are considered as a great contributor to the success in the Japanese construction industry in that MLSS facilitate the highly specialization of subcontracting market abundant with small and medium-sized specialist subcontractors, who make continuous efforts on technical and engineering issues and pose ways to pass down skills to their craftsmen.

3.4 Views on construction management approach regarding labor subcontracting

Efforts have been made in many countries to overcome the disadvantages of subcontracting

through management approaches.

(1) Direct control or delegating of labor management on site

Regarding the loss of control over the labor force and site work, one common practice is that general contractor adopts an arrangement whereby the labor is outsourced through a labor contractor but paid and supervised on its own, which has also been promoted by the Ministry of Railways in China since 2005. Through that, even when risk is passed down to the labor contractor with a fixed sum paid for a package of work, the site manager employed by the general contractor can still exercise a considerable degree of control. Bresnan points that it could be further enhanced through the use of known subcontractors with whom general contractor has a long standing work relations, or through the employment of professional subcontractors. However, direct control by general contractor is supposed to be a transitional mode seeing that the long term strategy for most general contractors worldwide tends to be a 'just in time' assembler, working with specialized, efficient and independent subcontractors as suppliers. It could be inferred then that subcontractors should be cultivated and stimulated by general contractor with more initiatives on developing their specialist skills and management capabilities to achieve more efficient construction production. Based on that, the situation of construction laborers who are largely recruited and employed by subcontractors could achieve fundamental and sustainable improvement.

(2) Contractual or non-contractual relationship

Recent Chinese government thinks that one of the most important solutions of labor issues is labor contract, revealed by the promotion of LSE which is ought to sign a contract with laborers. It is believed that if there is labor contract, the conditions of labor force would be much improved. Of course, contract

has legislated constraints by law enforcement in labor users regarding formal payment and welfare systems; however, it should be on the premise of sound law systems and legal compliance that are far from sufficient in current China. Many cases in other countries indicate that there is usually a large gap between regulations in principle and action in practice, suggesting that contract may not solve the problems fundamentally. An alternative solution is non-contractual cooperative relationships like Japanese long term working relationships up and down the construction supply chain. It has facilitated the further development of labor contractors, and consequently established a highly specialized subcontracting market with qualified specialty subcontractors in the past Japan.

4. INSPIRATIONS FROM JAPAN ON FACILITATING THE DEVELOPMENT OF SUBCONTRACTING MARKET

Generally speaking, within the construction industry, the value-added process is distributed across several organizations between GC and SCs. Without working together in a cooperative manner, supply chain efficiencies are difficult to realize. Bennett points that long term relationships contribute to the achievement of efficiency and great success in the Japanese construction industry.

Seen from Japan's experience, big general contractors usually play a major role in building and maintaining this long term relationships. *Kajima* is one of the Japan's big six construction general contractors, and the transition of relationships between *Kajima* and its subcontractors, who enjoy paternalistic but conclusive family relationships via the establishment of affiliations (referred to as Affiliated Companies), reveals a typical Japanese practice of facilitating the development of subcontracting market.

4.1 Facilitate subcontractor's integration into construction supply chain under the mode of affiliated companies

Through long term relationships under the mode of affiliated companies (*kyouryokukai* in Japanese), the well integration between *Kajima* and its SCs in the construction supply chain is realized.

What should be stressed here is SC's integration path into construction supply chain. In short, at the beginning, across the various projects, foremen employed by GC accumulated construction skills and technologies that increase operational efficiency within the GC, which later provided a high value to their business functioning. Their initial business with GC was to be an intra-company transaction, and then changed into an inter-companies transaction in the capacity of labor subcontractors with a construction corporative license. Then through turning into the GC's Affiliated Companies, labor subcontractors got an opportunity to further develop their specialist skills as well as management capabilities under the secure business environment attributed to the long term working relationships. This opportunity then facilitated them to be professional subcontractors or even general contractors along with the business extension. Normally it at least takes a foreman at the bottom subcontracting layer 7-8 years to accumulate essential construction skills and management capabilities to become a specialty company in Japan, according to the investigation by ISCP. Thus it is inferred that gaining a regular work with the same contractor has a significant meaning in acquiring skills or technologies that will be essential for future development of labor subcontractors, even though the whole process is generally informal and the time span of skill acquiring is varying. What's more, Japanese long term relationships through Affiliated Companies mode contribute to the decrease of transaction uncertainty up and down the construction

supply chain, and give labor subcontractors an incentive to develop and accumulate their specialist skills and management capabilities. From above, it could be seen that SC's sustainable competitiveness absolutely should not be cheap labor or material.

4.2 Business model of Japanese construction general contractor with one input as AC

In fact, it is a general and common practice in Japan to develop Affiliated Companies not only in construction, but in manufacturing as well. The difficulties lie in the concrete fulfillment process to apply this non-contractual cooperative relationship. Kajima's case reveals that in Japan big GCs play a decisive and conductive role in establishing and maintaining the long term working relationships with their SCs under the Affiliated Companies mode. Generally speaking, it is difficult to persuade them with economic benefits from long term relationships since it takes time to discover, whereas the undoubted merits from long term relationships are the commonly aware and accepted knowledge to most Japanese contractors.

Japanese GC's business model (Figure 4) reveals that Japanese construction industry has already developed into an 'assembly' industry with just in time and highly efficient assembling on site. Seen from the model, the business strategy of GC focuses on the added value to the output in the market, which depends on its technological and construction capabilities. Seeing that the outsourcing fee occupies more than 70% of the total project cost in general, SCs must be viewed as an indispensable input; hence, the cooperative level with SCs is believed to directly affect QCDS and then determine the performance of GC. Therefore, AC mode with long term working relationships is promoted and maintained by GC for quite a long period in believing that it could cultivate "good" subcontractors with a return of high quality

of service in construction.

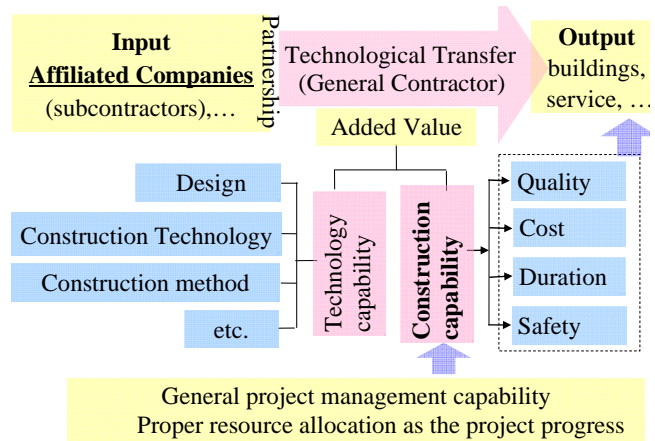


Figure 4 Japanese GC's business model

4.3 Japanese principle of organizational market

Itami considers the Japanese transaction pattern which emphasizes cooperation through forming long term relationships under Affiliated Companies is a mixture of Principle of Liberal Market Economy and the Principle of Complete Organization. It is mentioned as "organizational market", a unique Japanese conception. Different from the Market Principle in Western countries, the criteria for Japanese business guided by organizational market lie in the followings as distributed sharing, employee empowerment, and corporate alliances. Affiliated Companies are direct embodiment of corporate alliances with three aspects shown in Figure 5.

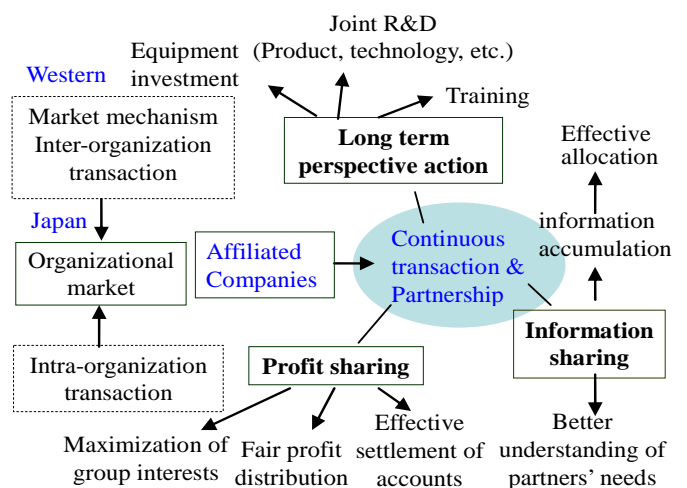


Figure 5 Japanese Organization Market

Guided by the principle of organizational market, a co-existence and co-prosperous relationship between GC and SC has been established and maintained for a long period in Japan.

4.4 Japanese public procurement under “assurance systems”

Another contributor to the success in the long term relationships lies in the Japanese public procurement with the characteristics of so-called “assurance systems” in the past. Bidding schemes in the assurance systems consist of *dango* and designation. In general, designation assured “good” subcontractors in the construction supply chain, which in turn necessitated the further improvement of SCs as well as the laborers’ skills. *Dango* (in Japanese) means complementary and rotational bidding, which reduced business uncertainty and strengthened the accountability among participating bidders in the past Japan, even though it is severely blamed as it operates like a giant siphon, picking up construction industry funds and transferring them back to the politicians who promise to keep the pipeline full. Seen from another aspect, through *dango*, the award price for up layer’s contractor is usually more than sufficient for completion of project, which ensures the potential profits for them, and hence it could be possible for them to share profits with its down layer subcontractors following the Japanese business philosophy. In short, *Dango* makes it possible to externalize the economic benefits of long term relationships up and down construction supply chain. To be more detailed, this practice is usually carried on under the down layer’s exclusive relationship to the up layer of the construction supply chain. This exclusive relationship means that at the bid and award stage, the contractor generally stipulates the contract price, instead of letting the subcontractor estimate the price for the work; while the subcontractor trusts that the

contractor will fairly represent his interests. The Japanese sub-contractual relationships are more likely to be based on negotiation than competition. Thus, the subcontractor just worries about the technical and engineering issues rather than gets involved in budget and account settlement, which indicates that conflicts about payment and claims for additional expense simply do not arise. In return for all these advantages, the contractor goes to great lengths to provide continuous employment and fair recompense for the subcontractors. Consequently, the long-term relationships on a basis of trust and a sense of brotherhood have been established and maintained.

However, it could be inferred that this kind of relationship is liable to a sharp decrease of the overall profits up the supply chain, which has been demonstrated by recent severe competition on bidding price along with the recession of Japanese construction. Regarding *Kajima*, according to a recent investigation on its Affiliated Companies, half of the respondents said that *Kajima* is valuing more on cost in the transaction, which results in low-bidder and a damage of previous long term and trust relationship. Instead of cost, most of those Affiliated Companies expect to be evaluated by more weights on quality or cooperative level. How to balance the competition and cooperation becomes a problem to be tackled for the Japanese construction.

4.5 Summary

In short, it is concluded that the predominant role of general contractor, principle of organizational market, and the ‘assurance systems’ for public procurement are the three interrelated and interacted contributors to the success in establishing and maintaining the long term relationships in the past Japan. This non-contractual cooperation between up layer and down layer brings risk sharing and trust between

them. It is acknowledged to be a big contributor to the good performance of MLSS, contrary to the fact that MLSS usually come to be a target of public criticism in most other countries. Consequently, a highly specialized subcontracting market with developed and qualified subcontractors has been established, absorbing more than 90% of construction employment in Japan.

5. IMPLICATIONS TO CHINA

It is concluded firstly that the interventions for regularizing the labor subcontracting market in current China ought to accept and base on current labor practices (such as reconsideration on the role of *baogongtou*), meanwhile take consideration of the possible coming future even when it is needed to deal with some of the negative repercussions of those practices. The dilemma in Chinese construction labor market is believed to be rooted in current construction subcontracting systems that restrict the subcontracting market excessively with ignorance of further development of labor contractors under the uncertain and futureless business environment.

(1) Necessity of the reform on current construction subcontracting systems in China

One deficiency of current subcontracting systems lies in its restrictions on subcontracting layers and scope in principle, although it commonly does not work in practice. It led to an unspecialized and undeveloped subcontracting market with incompetent and insufficient professional subcontractors and labor-service subcontractors. From the development of Japanese construction, only in a highly-specialized subcontracting market with promising subcontractors, construction management on site including labor-service management could be improved to ensure construction migrant laborers a better life lastingly.

(2) Promotion of partnering in support of the tentative changes in subcontracting systems

Kajima's experience points that establishing long term relationships between general contractor and subcontractors could be a valuable initiative to the achievement of the specialized subcontracting market that provides labor contractors with a more promising future. Only by taking their further development into consideration, the construction labor market could probably sustain with the development of construction industry.

As there has not yet any similar organization or mechanism on partnering in China, the relationship between general contractor and subcontractors is generally temporal and unstable, which results in a distrustful environment and further leads to a deterioration of project quality and safety. Affiliated Companies mode seems worth learning in view of its outstanding group strength in meeting the mutual fundamental demands for both general contractor and subcontractor. Moreover, it should be noticed that how to select capable committee members is extremely important, which demands a sound business evaluation system.

(3) Combination of cooperation and competition in labor procurement

As mentioned above, the long term relationships may easily lapse into a comfortable and less initiative business environment, a combination with market competitive mechanism may be a countermeasure to prevent the possible repercussions. Different from Japan, China has been stressing on market competitive mechanism with ignorance on the cooperative working relationships throughout the last three decades of economy ascending. Since there is not yet "assurance systems" for labor contractors under current insecure business environment in China, an opportunity to accumulate skills and

knowledge gained from working with the same contractor is lost. Regarding the practical situation of subcontracting market in China, the significance of combining cooperation with competition should be deeply understood up and down the construction supply chain, which may serve as a start point to regularize subcontracting market aiming at the achievement of sustainable construction labor market. Furthermore, seeing that the long term relationships are vulnerable to the economic environment particularly in economy recession, the sustainability of the long term relationships should be argued in further study.

REFERENCES

- AN T. Y., Watanabe T., 2010. Research on labor-service subcontracting management in Chinese construction industry, *Journals of the Japan Society of Civil Engineers F4 (Construction and Management) Special Issue*, 66(1):329-340.
- Assaad, R., 1993. Formal and informal institutions in the labor market, with applications to the construction sector in Egypt, *World Development*, 21(6):925-939.
- Bennett, J., Flanagan R., and Norman, G., 1987. *Capital and countries report: Japanese construction industry*. UK: University of Reading.
- Bresnan, M. J., Wray, K., Bryman, A., et al., 1985. The flexibility of recruitment in the construction industry: formalisation or re-casualisation? *Sociology*, 19(1):108-124.
- Charles, S. C. III, 2007. The irony of the cranes: labor issues in the construction industry in the new China, *ChinaWorld Conference, Copenhagen Discussion Papers* 2007-21.
- Hori, Y., 2010. The importance of the relationship between general contractor and subcontractor: focusing on the cases of Kajima Corporation and its affiliated subcontractors, *The Meijo Review*, 10(4): 187-207. [In Japanese]
- Institute for the Study of Construction Policy (ISCP), 2010. Research report on Hitori-Oyakata in today's Japanese construction industry, *Kensetsu Seisaku*, 131:28-37. [In Japanese]
- Itami, H., 1987. *Business under humanism*. Tokyo: Chikumashobo. [In Japanese]
- Sidney, M. L., 1993. *Japan's big six: case studies of Japan's largest contractors*. New York: McGraw-Hill.
- Vivian W. Y. Tam, Shen, L. Y. and Joseph, S. Y. Kong, 2011. Impacts of multi-layer chain subcontracting on project management performance, *International Journal of Project Management*, 29(1):108-116.
- Watanabe, T., 2006. A study on characteristic analysis of bidding and contract systems in Japanese public works and its reform from the view points of risk management, *Journals of the Japan Society of Civil Engineers F*, 62(4):684-703. [In Japanese]
- Wells, J., 2003. Labor subcontracting in the construction industries of developing countries, *Journal of Construction in Developing Countries*, 11(1):17-36.
- Wells J., 2003. Social aspects of sustainable construction: an ILO perspective, United Nations Environment Programme (UNEP) Industry and Environment, 72-75.