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[Field Research]

## Public Private Partnerships in Chinese Port as Infrastructure

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### Abstract

**Purpose** – The purpose of the paper is to look into and review the management and operation of Chinese infrastructure process, especially focusing on port industry.

**Research design, data and methodology** - The research methods to be applied is to examine PPPs that is a key way of cooperation in many infrastructure investment, financial matters, and then port industry as well.

**Results** – It is well noticed that Chinese government has well managed with project, planning and investments in national infrastructure matters. Especially, this is clear message that government institutions for infrastructure planning has been well organized with systematic structure. However, even if it is involved with some risky business, PPPs should be asked for cooperation in the areas of financial, institutional and logistic part of infrastructure development in China.

**Conclusions** – Every country has been in promoting its infrastructure development and it is not an exception in China. In order to get over inefficiency done by public sectors, Chinese government has invited a private sector in the form of PPPs, which gives more competitive opportunities, especially in port industry.

**Keywords:** Infrastructure, PPPs, Port, China, Private.

**JEL Classifications:** L32 L33, L91 L95, L98.

### 1. The Meaning of the PPPs

At the present time, it is widely spread that role of private sector has been focused and emphasized in one or another, which means it is time to transform that of public into private involvements. Accordingly, it is closely examined by the field that public-private partnership (PPPs), so called, PPPs has been noticed upon many part of national industries including infrastructure investment as seaports, and any other sectors.

The concept of PPPs has implied with a wide range of possible relationships between public and private entities. PPPs is defined as a long-term contract between a private party and a government institutions for providing a public asset or service, in which the private party has to pay significant

risks and management responsibilities (World Bank, 2012), that the private actor could entail finance, design, construction, operation, management and maintenance. As far as effectiveness of PPPs is concerned, it depends on the recognition that public and private players each have certain benefits in relation to others in carrying on specific tasks.

Therefore, some considerations should be taken in order to implement effectively the PPPs of any entities between public and private, and these are matters of relationships, contract and responsibilities (United Nations, 2015). However, the PPPs involving private participation is slightly different from mere privatization, and the government or public entity is ensuring that social obligations are met and successful sector reforms and public investments are achieved (Felsing, 2008). Therefore, the PPPs has more balanced portions shared by both parties as public and private sector, this means mutual involvement is much greater than that of privatization.

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In this case, it is needed to understand a little difference between privatization and the PPPs, which is, in port industry, generally global trends of privatization. However, port privatization is usually regarded as the best means to bring in expertise of private sector, and turn around the performance of a port. Many countries have privatized their ports in the 1990s, but many state-owned and operated ports are still in operation around the world as well.

## 2. Infrastructure and Chinese Situations

### 2.1. Infrastructure Aspects

Chinese dramatic growth has led to increased pressures on the country's infrastructure, as demand increases for urban infrastructure, electricity and improved transport networks. In order to meet this demand and help counter the effects of the global economic slowdown, China plans to accelerate its infrastructure development programme. Traditionally, investment in infrastructure development in the China has been dominated by the public sector. However, private investment has gradually been increasing as the government recognizes that the sheer scale of investment required may be too big for the public sector to bear alone (Ashurst, 2009).

#### 2.1.1. Infrastructure Projects

The NDRC (The National Development and Reform Commission, formerly National Planning Commission) has approved to launch major infrastructure projects, 55 cases on 2012 September <Table 1>. As far as environmental protection is concerned, ten projects have been approved, among them, nine was concentrated on western part of China, initiating for channel reconstruction and port construction in seven projects. However, two projects are given to central China, and five projects are allocated in eastern China. As for highway construction, 13 projects are assigned, equally distributed throughout all over the China, western and eastern and central province of China.

Finally, There have been acknowledged with 25 projects for intercity railway and rail transit, which is evenly well allocated into the east (16), the west (6) and the central (3) China. The majority of NDRC-approved infrastructure projects (45 percent) are for rail transit and intercity railways. The eastern region still leads the central and western region in terms of infrastructure development and approved projects (KPMG, 2013).

<Table 1> Infrastructure projects

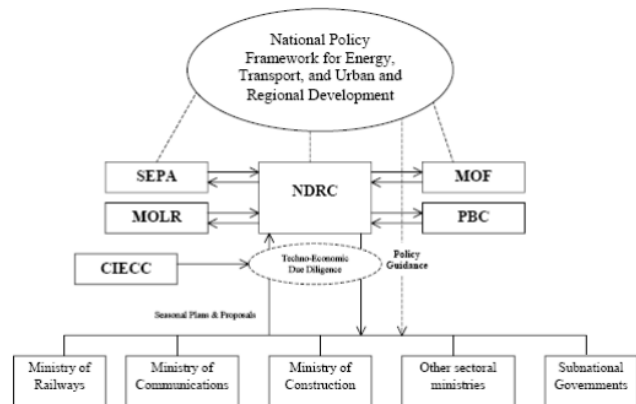
Industry	Region			Total
	East	Middle	West	
Environmental protection	-	1	9	10
Port construction and channel reconstruction	5	2	-	7
Highway construction	4	3	6	13
Rail transit and intercity railway	16	3	6	25
Total	25	9	21	55

Source : KPMG (2013).

#### 2.1.2. Infrastructure Planning

In China, it has been well organized, that is systematic and dynamic, into infrastructure structure in order to develop national infrastructure <Figure 1>. Infrastructure planning and development in China is carried out by multiple government institutions (Wilkins & Zurawski, 2014).

It is well noticed that to develop infrastructure system of planning, it includes socioeconomic and sectoral aspects at the level of all government functions, coming along with urban planning at the municipal sides. The time structure for socioeconomic and sectoral schemes is scheduled with medium-term (i.e., five-year), long-term, and annual plans. Master plan of urban generally marks 20 years time span. The NDRC will play a major core role of the planning machinery and systemize economic strategies for national development in terms of five-year and annual plans. It organizes and coordinates the implementation of plans for infrastructure development across states. (Sahoo et al., 2012).



Source : Sahoo et al.(2012).

<Figure 1> Institutional Setup for Planning

### 2.1.3. Open to Private Investors in China

China has targeted annual GDP growth for seven percent according to 12th five-year plan up to 2015, and its government has also begun to look more closely at alternative source of finance. In this terms, infrastructure investment are increasingly being open to private capital. The rules has been relaxed on foreign institutional investors those who are qualified, and other types of indirect and direct investment have enhanced the outlook. Like any other countries that are on the way of development stages, China also have welcomed foreign investments traditionally, which have provided more technological support and special expertises where are lacking in China (KPMG, 2013). From this viewpoints, it can be figured it out how Chinese government has desperately looked for international outsiders who can give China supports and opportunities of national development. In infrastructure investment, private capital through equity and cooperative joint ventures is encouraged to participate in the building of transport facilities such as cities' roads, railways, bridges, and public car parks.

As far as transport project is concerned, until the 1980s, China had a top-down and state-centric approach to transport management in place. The source of transport project finance was mainly the central state budget. Other tasks than finance, including design, construction, operation and management, were assigned to 100% state-owned enterprises (SOEs). This state-centric approach generated a number of starting conditions for the newly evolving equilibrium. First, experience with delivering transport service was limited to what was commonly practiced with in a command economy. In other words, there was no experience with contracting out, forming partnerships or alliances, or carrying out competitive tenders for these selection of optimal project developers. Second, the long duration of living in a command economy and lack of effective evaluation of SOEs performance led to accountability, transparency and efficiency problems within the public sector.

However, a trend of growing demand for transport services and limited infrastructure capacity could already be witnessed and operated as a bottleneck hampering economic development. A strong external driver for the shift from the command and control approach to the private sector driven approach was the global trend to apply privatization and liberalization to infrastructures and its apparent success in leading world economies. A strong internal force was DengXiaoping's Southern Tour in 1992, in which the initial opening-up reforms in China were backed up by a subsequent plea for further privatization, commercialization and decentralization (Mu et al, 2011).

Over the next few years and in light of the economic

stimulus package highlighted in this briefing, the China will provide a multitude of opportunities for private investors in infrastructure. Given the scale of the infrastructure investment that is planned and required to support the China's continued economic growth, it is expected that both national and local public sector bodies will become increasingly open to foreign private investment in the infrastructure sector (Ashurst, 2009).

### 2.1.4. Public-Private Partnerships in China

As Chinese economy has activated in one way or another, it is requisite to take a step from public to private sector. It is not possible for country to cope with new demand, following national developments, with lack of existing infrastructures that China has organized and managed for the long time. Private sector participation has been increased in infrastructure and public sector provision due to the unsatisfactory performances and mismanagement specifying a lot of publicly-operated and owned utilities, which can be a reason for attracting a participation of private sector. Furthermore, it is also said the increasing needs of urban infrastructure (power, water supply and sanitation, roads, ports, telecommunications, etc.) and the inability of the public sector to mobilize these resources. (Panayotou, 1997). In terms of transport industry, a number of privately-built ports and toll roads are now operating and private investment is now permitted in a number of sectors through either wholly foreign owned companies or joint venture arrangements.

Partnership agreements mostly consist of an allocation of risks, responsibilities and objectives to both the public and private partners. In China, PPPs agreement can also be made between governments and state-owned enterprises, where the latter is considered to be the private partner. The PPPs have been developing in China since the very late 1980s, but the year 2014 might prove to have been a landmark year in this development. In November 2013 the Third Plenum of the 18th Communist Party of China emphasized the decisive role that market forces should play in the Chinese economy (Davis, 2013). The Party's actions in 2014 confirmed this direction, particularly as it relates to PPPs, resulting in many associated circulars, regulations, declarations and debates (Thieriot & Dominguez, 2015).

Although the outlook for infrastructure investment in China generally appears strong, there are nevertheless some significant risks. These risks mainly relate to the primary government role for allocating and financing infrastructure investment. Therefore Chinese authorities have proposed reforms to address these risks. (Ministry of Finance 2014). The answer for this risks could be PPPs to promote Chinese infrastructure developments.

### 2.1.5. Chinese Reform Proposals

The government of China has taken active steps to build capacity for PPPs. Guidelines and training sessions are being organized to increase the capacity of local governments to design efficient PPPs, model contracts are being developed, the legal environment might soon be improved with the Infrastructure and Public Projects Franchise Law, judicial reform may increase judicial independence and ease the dispute settlement process (Huang, 2014), sectors opened to private and foreign participation are broadening, and the national government is implementing pilot programs seeking to develop a number of PPPs acting as “pathfinders” in a learn-as-you-do strategy (Jiao, 2014).

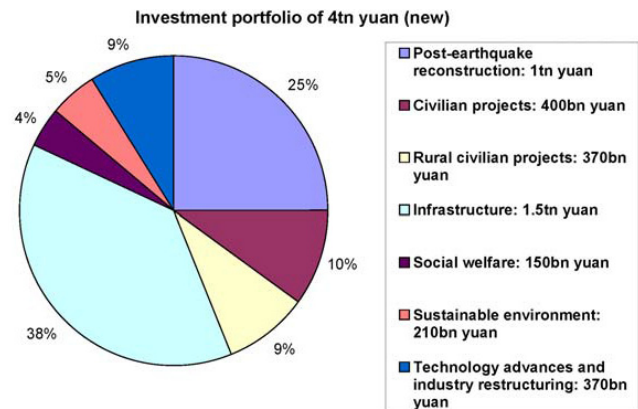
Recent reforms announced by the State Council and the NDRC aim to decentralize the project approval process and facilitate a greater contribution to infrastructure from private investment, as well as increase the transparency and efficiency of the approval system (NDRC, 2013).

More broadly, Chinese reform proposals have highlighted the need for private sector involvement in infrastructure investment and the market forces to deal with significant capacity in allocating resources. Proposed reforms include supportive measures for PPPs in order to attract more private capital for infrastructure investment. Alongside these reforms and following pilot programs launched in Harbin and Luoyang, the State Council recently announced plans to launch 80 PPPs in infrastructure industries (State Council 2014c), including a new subway line in Beijing and several new ports. Efforts to simplify and decentralize the investment approval process should help to attract more PPPs. But, as experience in many other countries has shown, there are a lot of preconditions required in order for these partnerships to be successful, and PPPs tend to make up only a small share of infrastructure financing even in advanced economies (Wilkins & Zurawski, 2014).

## 2.2. Financing Aspects

### 2.2.1. Infrastructure Investment

The State Council and the NDRC are both responsible for the direction of infrastructure investment <Figure 2>. Transportation infrastructure has comprised roughly a quarter of total infrastructure investment. (Wilkins & Zurawski, 2014). In general, China has successfully developed its infrastructure for fostering the economic competitiveness especially in the manufacturing industries and attracting large foreign direct investment. In this backdrop, it would be emphasized the contribution of infrastructure development and the role of public and private investment in infrastructure to economic growth in China (Sahoo et al., 2012).



Source : Ashurst (2009).

<Figure 2> Infrastructure Investment Portfolio

### 2.2.2. Financing Infrastructure Facilities

Along with the strengthening of the country's reform and engagement with economic globalization, many more Chinese cities have been recognizing that public infrastructure well-equipped is a key factor to improve competitiveness of their city. As far as capital raising is concerned, it has been major trends in China that in most cases construction funding for public infrastructure comes from public sources. But new ways of attracting fund for private capital has been considered as one method of accelerating delivery of that public infrastructure (ESCAP, 2005). Accordingly, in order to develop public infrastructure, it is asked for stakeholders, notably government, to consider the proposed actions as follows (Liang, 2008).

### 2.2.3. Viability of Financing Sources

First, it is asked to promote the viability of financing sources.

It is hard to meet the large demands for infrastructure generally due to limited public finance. In 2006, it reached 3 trillion yuan to infrastructure investments. These beared transportation, logistics, gas, and water, hydrology, power supply, environment and public infrastructure maintenance, and facilities for sports, education and recreation. The volume and viability of the private sector investments should be mobilized, and infrastructure policies for foreign investments should be further examined, among something to simplify complicated procedures.

### 2.2.4. The Financing Mechanism

Second, it is needed to regulate the financing mechanism. In order to construct infrastructure facilities in China,

financing process is complex. In case of different sectors related, it is not working well with coordination and it also suffers from lack of transparency. Therefore, it is natural even though investment efficiency is unsatisfactory. As for infrastructure development, some minor adjustment and management and planning must be strengthened. The financing mechanism should be institutionalized and regulated to promote resource integration. Innovative financing mechanism should also be pursued.

#### 2.2.5. The Cooperation between Two Parties

Third, both private sector and governments should try to cooperate with each other in order to develop infrastructure. As investment has been much involved into private sectors that has increased to its capacities, China become to have significant potential to be able to develop its infrastructure development. Accordingly the government have to describe apparently its responsibilities and roles, along with those of private sectors. Furthermore, the attitude of government should be considered into service-oriented, looking for management efficiency improved in the bureaucratic way of working environments. Similarly, it is asked to balance the disparities that could appear between theory and practice, by making efforts to supervise and evaluate infrastructure development process.

#### 2.2.6. Logistic Development

Fourth, it is essential to promote logistic development. It is key factor to improve infrastructure as the condition of logistics industry. To promote development of the logistics industry, many things should be done. Government have to make a best efforts to improve the infrastructure for transportation and some other things like storage transit, refrigeration, and information sharing. Also, priority has to be given to accommodations as well as restaurants facilities. To facilitate trade development, both logistics hubs and multimodal transportation must be improved as well. Along with the above, human resource management should be emphasized to develop the logistics industry.

From the above-mentioned, it can be said in summarized that it is strongly asked for both parties of public and private sector to cooperate with promoting financial, institutional and logistic part of infrastructure development in China. This is a certain process to establish more stable financial status to be able to invest and develop infrastructure in China as well as make PPPs work efficiently.

#### 2.2.7. Risk and PPPs

Public-private partnerships (PPPs) in infrastructure is a relatively new experience in most developing countries of the Asian and Pacific region. Although many governments have

considered various steps to promote PPPs in their countries, lack of capacity in the public sector is shown as a part of major problems to implement PPPs projects. So far, only few countries have established institutional arrangements and developed manuals and resource materials in support of PPPs development and for the capacity-building of their public officials. In the absence of such established institutional arrangements and resource materials, public officials face difficulties in project development and implementation, and general public can have many misunderstandings about PPPs (ESCAP, 2011).

In implementing PPPs infrastructure projects, it is strongly required to review and examine some considerations which is happened in the process of private involvements. Otherwise, PPPs could be risky business to both public and private entities.

Infrastructure projects are very complex, and hence PPPs in themselves have to be bespoke. The risks and responsibilities have to be allocated to the public and private parties in a manner that best suits the demand and revenue forecasts of each project. Especially, responsibilities should be emphasized to clarify the nature of infrastructure projects. Therefore, they must also be compatible with the conditions in China. However, some general principles can be considered in order to harness the full potential of PPPs in China (Thieriot & Dominguez, 2015).

As in all new PPP markets, uncertainties abound around the development of PPP transactions. A first concern is the high degree of uncertainty faced by private entities when joining PPP projects. The limited capacity of local governments to conduct proper risk analysis and negotiate with private partners also prevents the development of PPPs. Existing financing channels may also prove too limited to support the acceleration the government aims for (Thieriot & Dominguez, 2015).

### 3. The Port as Infrastructure in China

#### 3.1. General Background

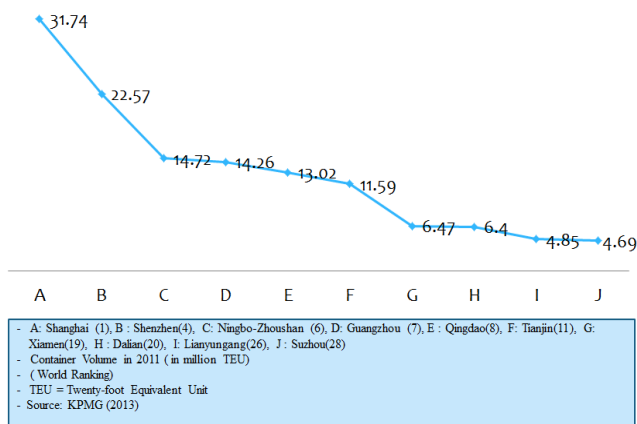
The countries leading the way in private participation have been able to attract significant private capital investment to refurbish infrastructure assets and modernize cargo handling equipment. Under private management ports have usually significantly improved their performance, boosting labor productivity and service quality and reducing handling costs. Whether these efficiency achievements can be sustained will depend in large part on the extent to which competitive pressures can be brought to bear on private operators, through competition among ports or within ports (Sommer, 1999).

In 2012, construction plans have been officially announced by a lot of provinces and cities in China as far as the infrastructure sector is concerned. In addition, both investment and plans that is attributed by local and central government have been focused on transportation infrastructure as well as construction.

### 3.2. Chinese Ports

In the first half of 2012, in spite of that the lower throughput has accounted, fixed asset investment has grown 19.9 percent, which indicates confidence of value in the long terms as far as port infrastructure in the waterways area is concerned. For instance, Zhanjiang Port that is located at Guangdong has been expanding their own berthing capacity, anticipating for a serious of substantial projects from companies like Baosteel and Sinopec. However, it has also been highlighted China's need for more improved system of transport industry, arranging for expansions of inland waterways in the process of the 12th five-year plan.

The growth in Chinese port has been seen a considerable slowdown according to dullness of the global economy, which has presented with trade volumes in and out of national ports (above a designated size: 10 million tons for inland, 15 million tons for coastal) up 7.2 percent, showing 6.1 fall of percentage points from the growth scales appeared a year ago. Total container throughput has been down in national growth in annual terms by 4.3 percent, however, it fell 11.3 percent yearly to the end of June 2012 <Figure 3>.



<Figure 3> Top 10 Mainland China Ports

### 3.3. Two Main Factors

Geographically, three major manufacturing hubs in China are situated nearby key ports : the Yangtze River Delta around Shanghai, the Bohai Rim around Beijing/Tianjin and the Pearl River Delta around Guangdong. It is new trend in

China that port facilities operated by common-user has been increasingly involved with the private sector during the 1990s, according to dominance of public sector to the port since the 1940s. During the past decade the reform of port administration has gained momentum in industrial and developing countries alike. This trend is set to continue. The shift toward private involvement has been driven by two main factors (Sommer, 1999) :

- The strong growth in world trade<sup>1</sup> has led captive port users—unable to switch to other transport modes, such as railways or airports, or to other ports—to put enormous political pressure on authorities to improve handling efficiency, reduce port user fees, and expand facilities to accommodate larger cargo flows. Yet many public port authorities have had only limited success in the area of improvement of labor quality and other practices to promote the productivity and efficiency in terms of existing installations.

- A number of global shipping company has emerged into world market due to cargo shipment with economies of scale, and it can manage with transshipment business, well allocated to hub ports as strategically situated, well-equipped, and efficiently managed facilities. To stay competitive, port authorities must take an actions such as modernization and upgrade of port facilities to fulfill the requirement of the large shipping lines. But it is some matters public port authorities has to consider carefully that the investment needed could not afford to the financial and managerial capacities, following to the larger vessel, more advanced form of containerization, and development of cargo information systems sophisticated.

### 3.4. Private Participation in Chinese Ports

Private participation in port operation has grown strongly over the past decade, driven by broader trends in the transport sector and a new perception of the roles the public sector has to play in the clauses of infrastructure services. China have opened the management of its ports to the private sector beginning in 1991. The Hutchison Whampoa as Hong Kong Port operator has acquired Shanghai container facilities in charge of the development and management in 1993 and in Yantian in 1994. By 1998 thirteen facilities in China were managed by the private sector. Private operations are generally structured as joint ventures with the public port authorities (Sommer,1999).

Private investment in ports, which is permitted (up to 100 per cent) under the Ports Law, 2004, is relatively high (for example, the large-scale development of Qingdao off the coast of Shandong province and Hutchison Port Holding's participation in the development of a number of ports, including container terminals in Shanghai and the Yantian container port in the Shenzhen Special Economic Zone).

Although the economic slowdown and related drop in exports has reduced current demands on the Chinese ports, it is expected that once the global market picks up again, the China will need to increase its container and bulk commodity port capacity in order to meet the demands of its export market (Ashurst, 2009).

It has been clear trend in China that port construction market has been involved into foreign investors' interest, rather than dynamic taking a part by government-owned and private owned enterprises domestically. Currently, private capital raised domestically is at large focused on coastal and inland ports that is small and medium-sized in China. That is why domestic private enterprises can't afford to pay or have the ability to be involved into larger ports in terms of investment. As a consequence, private capital to the larger ports has invested on rather auxiliary facilities as freight forwarding, customs clearance, truck transportation, and packing activities, warehousing.

The first costal port capital-held domestically and privately is Liaoning Jinzhou Port.

The original capital of government-owned port presents for 22 percent only, domestic private capital shows 33 percent, and shares of private capital containing employees holding shares over 50 percent in Jinzhou Port Co., Ltd. According to the involvement in domestic private capital, it has been brought out important changes to port system and mechanism in the Jinzhou port. It has been also remarkably noticed that construction, production and operations in port has been developed rapidly, and accomplished economic advantages positively.

However, the best method to privatize port ownership in china is to attract more actively foreign capital, if difficult to induce domestic private capital. This will widen financing routes for port construction and largely cut down rate of government-owned capital.

The joint venture project between China and foreign capital can be still regarded as the major form of public involvements in Chinese ports for construction and management. There are important foreign investors in costal ports, firstly by minor strategic stakes like those by Hong Kong companies and any other global port operators. According to NDRC's 2012 Catalog of Foreign Investment Industries (effective 30 January 2012), foreign private sector involvement is encouraged with up to 100 percent foreign ownership permitted (KPMG, 2013).

#### 4. Conclusion

As economic growth has been clearly justified and shown on the Chinese development process, it is evitable for its industry to equip with more facilities like infrastructure every

sectors in China and it is nearly impossible to afford the demand relatively. Therefore, urgent need for national infrastructure has been strongly asked by the field following inefficient management which has been done by public or government authorities, compared with private one. Consequently it leads to attract private resources naturally of either financial equity or some form of management as well as operational matters, etc. In China, a lot of infrastructure project and investment are required in vast national territories, which attracts private involvement as well.

In this sense, PPPs could be answer for Chinese infrastructure markets that both public and private party should cooperate with many part of sectors amicably. Traditionally it is much more utilized in many infrastructure investment, management and operations, etc. Among them, port is one of these sectors that is asked more public and private partnerships in social overhead capital (SOCs).

Alike any other port in the world, Chinese ports controlled by national government have resulted to either inefficiency or lack of competitiveness in its industry. It come from public weakness to manage these matters that couldn't be handled by public sectors properly. Therefore, it makes national government to think and take an action to cope with port market and industry by moderating or re-establishing the port system of ownership, management and operation matters (Kim, 2016), which present autonomy, efficiency and competitiveness (Kim, 2015). By PPPs in Chinese port infrastructure, it is clearly justified with more competitive port in the world.

From the lessons of Chinese PPPs based on this paper, it is more desirable for any government to organize national infrastructure in terms of public and private partnerships, which makes and produces more efficient operation and development of their domestic infrastructure, and furthermore it can also apply to national port industry as well. It is clear that at the current times the co-operation of two sectors, public and private, is inevitable for any governments to take into account and apply to their national development for infrastructure including port industry.

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