

A Comparative Perspective on Dry Ports in India, China and Western Europe

Girish Gujar*, Hong Yan
 Department of Logistics and Maritime Studies
 The Hong Kong Polytechnic University
 *EMAIL: tcryee@inet.polyu.edu.hk

Abstract: Unlike the developed countries of Western Europe, the emerging economies of Asia such as China and India have never been maritime nations with high levels of sea trade. With the introduction of market reforms the foreign trade picked up and so did the containerization. In order for the consumers to avail themselves of the true benefits of containerization, the containers are transported to their doorsteps. For this purpose the governments created special agencies to transport the containers to the hinterland collection/distribution container depots or dry ports as termed by UNCTAD. In the west European countries these dry ports are set up and operated entirely by the private sector while in the developing countries of Asia the role has been enacted by the public sector. This paper attempts to compare the dry port operations in Asia and Europe and analyze the advantages and disadvantages from the customer's perspective. Subsequently an effort is made to draw inferences for the future growth of this industry.

Keywords: Dry port, India and China

I. Introduction

Evolution of Dry Ports is a direct result of development of global transport strategies. The phenomenon of shifting manufacturing basis from coastal areas to further inland locations was a consequence of capacity limitations of gateway ports. The growth of intermodal transport in turn assisted in addressing the capacity issues. The congruence of these factors created the right conditions for the evolution of dry ports. In the light of the financial tsunami, the rapid technological changes and the fluctuating global trade conditions, this paper reviews the importance of dry ports in the reorganization of regional freight distribution in China and India. The paper is broadly divided into two sections. The first part discusses the functions played by dry ports in general in the developed countries of Western Europe while the second part focuses on functions undertaken by China and India and compares them with the dry ports in western European countries.

Since the advent of containerization in Western Europe and USA intermodal dry ports became an integral part of the freight transport systems. There were several reasons for this evolution of dry ports. The insatiable focus on trade growth led to exhaustion of port capacities resulting in congestion, diminishing returns and drastic fall in efficiencies. This forced the stakeholders to shift the gateway ports outside the city limits in the initial phase

and making available the port facilities such as custom clearance to inland dry port locations in the subsequent phase. Thus the evolution of dry ports could be seen as cycle in the ongoing development of containerization and intermodal transport (Nottenboom & Rodrigues 2009).

With the establishment of global supply chains in 1990s and the export oriented growth strategies adopted initially by the East Asian countries caused a paradigm shift in contemporary freight distribution systems. It forced the logistic service providers to analyze the entire supply chain. Dry ports and multi modal transport became the obvious focal point of this new strategy. This solution was initially implemented in the developed countries particularly USA and Western Europe followed by the East Asian countries.

Meeting the need for integrated global logistics has led to the development of a considerable market for logistics services, not only in traditional industrialized countries, but also in the prosperous developing economies such as China. With the globalization of manufacturing and trading, the new outsourcing trend for manufacturers, i.e to look for global logistics packages rather than just straightforward transport or forwarding, has opened new windows of opportunity for transport companies and encouraged many transport companies to transform themselves into intermodal logistics organizations (Notteboom, 2001).

Within the changing context of compliance with shippers' logistics requirements, the major Chinese groups operating in freight transport and shipping services, such as COSCO, China Shipping and Sino-trans, have shown signs of great activity; while continuing to focus mainly on freight transport and shipping, they have shifted their attention from a port to port approach to that of door to door so as to provide services that better meet the needs of customers. In addition to transport services, they have also implemented strategic choices to engage in warehousing, distribution and other outsourcing activities.

India was a relatively late starter in respect of containerization. It was only in the late eighties due to the persisting demand of international commerce; the government was perforce compelled to adopt some aspects of containerization. The pace of containerization in India really picked up in the late nineties as the economy grew and the export-import trade witnessed a sustained growth. In order to facilitate door to door intermodal transportation of containers the need for setting up dry ports was severely felt. Initially the government improvised some rudimentary dry port infrastructure at railway goods sheds before proper intermodal facilities could be constructed. The Government set up an autonomous corporation under the auspices of

ministry of railways, not only to transport the containers to and from the gateway ports but also to establish and operate dry ports at various locations in the hinterland. These developments provided the requisite thrust to country's international trade as globalization opened the global markets to Indian industry. The dry ports were considered to be the key nodes of efficient supply chains.

II. Definition of Dry ports

Dry Port, also termed as Inland Container Depot (ICD) or a Container Freight Station (CFS), is usually a common user facility, for handling and temporary storage of goods for import/export, laden/empty containers, for clearance by Customs for home consumption, warehousing, onward transit, or export. The definition according to a United Nation's text was: **"An inland terminal to which shipping lines issue their own Bills of lading for import cargoes assuming full responsibility of costs and conditions and from which shipping companies issue their own bills of lading for export cargoes."**

This definition emphasizes the role of shipping lines as a common carrier and their ability to accept responsibility for inland transportation. This is in addition to its traditional role as a carrier of goods during the sea leg of the journey. With the rapid development of containerization, the definition of dry ports was altered and became more comprehensive.

The latest definition of a dry port according to UNCTAD is: **"A common user facility with public authority status, equipped with fixed installations and offering services for handling and temporary storage of any kind of goods (including containers) carried under customs transit by any applicable mode of transport, placed under customs control and with customs and other agencies competent to clear goods for home use. Warehousing, temporary admissions, re-export, temporary storage for onward transit and outright export."**

This definition demonstrates a shift of emphasis from merely highlighting the role of shipping lines in the earlier definition to the dry port itself as a specific facility to which goods could be consigned for inspection of customs and determining and collection of revenue accompanied by special documentation.

A dry port signifies a hinterland facility which is directly connected to one or more seaport by one or more means of surface transport such as rail, road or inland waterways as the case maybe. The definition also stresses upon the physical existence of a customs enclosure or a security cordon in order to prevent leakage of customs revenue. Such dry ports are essentially common user facilities for users. It is immaterial whether the dry port operator/owner is a public institution, private organization or bit of both.

The congruent nodes in the hinterland have been referred to as dry ports, inland ports, inland container depots, container freight stations etc. Roso, V (2005) makes a distinction

between these facilities based on functions of these facilities. Jarzanskis et al (2007) defines the dry port as a common user facility with public authority status which is equipped with fixed installation and which provides temporary storage for goods and containers in addition to custom clearance. Weigmans et al (1999) takes into consideration the value addition activities provided by the dry port operator such as consolidation and distribution of cargoes.

The requirements of exporters/importers at dry ports are varied. There are commercial formalities and legal requirements which have to be strictly observed. For example, an exporter may require a competent freight broker to negotiate the best rates for ocean voyage, an expert for proper stuffing, another expert to complete their documentation, and so on. It would be ideal for the user to get all the services from a single agency, but the increasing specialization of activities has given rise to specialists in every activity. Such specialists are able to provide greater value. Typically, a dry port provides a set of core services, such as container handling to the customers while allowing them full freedom to choose their service provider for, say, freight forwarder and road transportation.

The dry ports also facilitate interchangeability through transport modes from rail to road and vice versa or to inland water transport. In addition, they provide temporary storage for goods and containers in order to consolidate or de-bulk into smaller or larger loads for onward transit. A dry port is a corollary to containerization and is geared for handling of unitized cargoes. On the contrary, an ICD is as a rule dedicated only to containerized or containerisable cargo.

There are three major types of dry ports: Gateway Terminals, Rail Terminals and Distribution Centers. A seaport terminal provides an interface between the maritime and inland systems of freight distribution. The erection of dry ports on river systems in Western European countries, USA and China has led to development of barge terminals linked to gateway ports. Secondly the rail terminals serve as linkages to gateway port terminals. The chief difference between the two different types of dry ports is the ability to clear sea port with or without custom clearance. The third type of dry port is known as distribution centre in western European countries. They perform an array of value added functions in addition to the transportation and warehousing operations such as sorting, grading, packing, labeling, de-bulking, inventory control etc. Most of the dry ports in China and India are of the first two types noted above with little value added activities being conducted.

III. Objectives & Mission of Indian Dry Ports

It has been observed that economic growth and trade has traditionally been linked with development of sea ports. As the trade grows, the port becomes a centre of attraction for factors of production as well as distribution-associated services. There are several examples of this phenomenon such as port cities of Shanghai, Hong Kong, Mumbai,

London and Singapore. If the growth is not matched by increase in capacity, it would eventually result in creation of bottle necks and congestion. But there are strong limits to increase of capacity such as conflicting needs for land, price of land itself, port tariffs etc. In order to solve this problem, several industrialized nations have promoted the development of dry ports at inland locations and integrated multimodal transport systems to provide easy access to such locations.

A closer examination of regional growth reveals that coastal areas enjoy higher growth rates, while development lags behind in the hinterland areas away from the coastlines. One of the several factors influencing this process is higher cost of accessing markets and inadequate connectivity. This made inland locations less competitive.

The establishment of dry ports was expected to facilitate shippers/consignees to undertake consolidation and distribution activities as well as complete export/import custom formalities at inland locations located relatively closer to their production and consumer bases. This would not only help in lowering of transaction costs for the exporters/importers but also assist in reducing the congestion at the gateway seaports.

The planners also expected that the dry port would attract several associated services along with manufacturing activities which could subsequently lead to an agglomeration of manufacturing and service industries. Such an expansion would be particularly beneficial to small and medium sized enterprises in assisting their growth. Thus the objective of the dry ports was partially socio-economic rather than purely commercial in nature. The development of rail-connected dry ports was also expected to divert traffic from road to railways resulting in significant environmental benefits.

In view of the above, it is relevant to note the objectives and mission of some dry port operators. The corporate mission of CONCOR states; **“Our mission is to join with our community partners and stakeholders to make CONCOR a company of outstanding quality. We do this by providing responsive cost effective, efficient and reliable logistics solutions to our customers through synergy with our community partners and ensuring profitability and growth. We strive to be the first choice of our customers. We will be firmly committed to our social responsibility and prove worthy of trust reposed in us.”**

On the other hand, the mission of Gateway Distriparks, a private dry port operator is, **“To give our customers a competitive advantage through superior logistics and transport solutions with flexibility in pricing. We will meet and exceed our customer’s expectations of service through a two way, clear, concise and timely communications.”**

The contrast between the objectives of the government in promoting development of dry ports and stated objectives of two private sector dry port operators is quite apparent.

Name of Activity	In India	In China
Transportation of Containers by Rail.	Outsourced to Indian Railways	Outsourced to China Rail.
Maintenance of Railway Wagons	Outsourced to Indian railways	Outsourced to China Rail.
Transportation of Containers by Road.	Outsourced to Vendors	Conducted in house
Container transportation within Dry Port	Outsourced to Vendors	Conducted in house
Container transportation- door delivery/pickup from/to ICD	Outsourced to Vendors	Conducted in house
Cargo Stuffing and Destuffing	Outsourced to Vendors	Outsourced to Vendors
Value added related services provided at the CFSs such as palletization, fumigation, repacking, bar-coding, labeling	Customers are allowed to get these done by their own service provider.	Conducted in house.
Container repairs	Outsourced to Vendor	Conducted in house
Cargo consolidation/ deconsolidation	Performed jointly by dry port operator and independent LCL consolidators	Conducted in house.

Neither of the dry port operators envisages a role of regional socioeconomic catalyst for itself. They do not consider it their stated priority to encourage regional growth by attempting to meet local demand for specific specialized logistical services.

It is obvious that due to regional environmental differences the strategy for economic growth is bound to differ and hence the demand for specific logistics services will also be different. Thus there is a need to match supply of specific dry port services with the regional demand for such logistical services. The “one size fits all” method of providing standardized services is bound to result in underutilization of dry ports..

IV. Dry Ports in India – An Improvised Landlord Model:

There are several models for providing services in a dry port; directly by the owner or through other service providers or a mix of both. The popular dry port model in India is the landlord model. The majority of the share equity of the public sector dry port operator is owned by the government. In this paper, Container Corporation of India Limited (CONCOR) is considered as the landlord. Majority of the dry ports are constructed on land owned by the Ministry of Railways and leased to CONCOR. The dry port operator further outsources its services to several contractors/vendors. It gives full freedom of choice to its customers/users of the dry port facility regarding their CHA (Customs House Agent) or Freight Forwarder, Shipping Line, etc. In some

terminals, they can get the containers stuffed by their own labor or ask CONCOR to arrange by its labor contractor. CONCOR imposes only the minimum restrictions on outside labor. Within CONCOR itself, there are variations between different dry ports and the degree of control on outsourcing varies from place to place. A comparative table showing activities conducted in house and outsourced in India and China is given hereunder:

The dry port operator focuses on the following framework activities in addition to setting up and operating ICDs and CFSs:

1. Landlord function such as long-term planning, infrastructure development, asset management.
2. Regulatory function such as obtaining permission from Customs, transport safety, environment protection and fair competition, and
3. Co-ordination function such as co-ordination among government agencies, decision making authorities and planners of the city; under the commonly shared long-range policy and
4. Facility/promotion function such as strategic marketing

The landlord model with minor variations of departmental and outsourcing mix offers the following advantages to the customers:

1. Customers have access to highly specialized service providers
2. Customers have more options. It helps them control their costs. It also gives them a clear feeling of being in control of their activities.
3. Less centralized control permits greater flexibility in rating and control of activities
4. Dry port owner is not burdened as the direct employer of a large number of workmen. Legally, the owner of the dry port continues to remain the "Principal Employer" of all the workmen working in the premises but, in practice, the direct employer is responsible for all the IR issues.
5. It generates stable income for the dry port owner from the license fees, lease rent, etc. charged from the service providers.

The disadvantages of this model are as follows;

1. Dry port owner has little control over the price or quality of the services by the outsourced service providers.
2. Poor service by any of the service providers may result in the customer deserting the dry port.
3. Service is expensive as there is an additional layer to skim the customer.
4. Service provider may not have the permission to invest in any long term asset as he may not be assured of his tenancy or lease period
5. In case the service provider has no assurance of continuing for a long term, he can not invest in upgrading the services.

V. Role of Dry ports from a West European Perspective

A few years ago, a consortium headed by ECORYS evaluated on behalf of the European Commission the concept of integrated services in the intermodal chain. Several hundreds of dry ports in Europe were evaluated, classified and the study aimed at discerning the most cost-effective ways of further stimulating growth around these centers. No clear socio-economic indicators were evolved, so to gain insight in the possible relevance of these dry ports, we have to look at an appropriate analogy. This analogy can be found in the socio-economic relevance of EDC's (European Distribution Centers), a sector that is well researched in Europe in the recent past.

Centrally located countries like the Netherlands and Belgium attract most of these distribution centers, being important logistical nodes in the supply chain of various types of manufactured goods. Research has demonstrated that the economic relevance of attracting these centers can be significant.

It is estimated that several tens of thousands of employees work directly in these distribution centers (approximately 40,000 in France, UK, Netherlands and Flanders alone), generating around 4-8 billion euro of GDP added to the local economies by capital expenditures, consumer expenditures and local and regional taxes. Moreover, the activities of other firms, by supplying services and/or goods to these distribution centers, or offering maintenance services of capital goods and premises, etc, generate substantial indirect economic benefits. So for the Netherlands and Belgium, attracting relatively many of these EDCs, deliver clear net economic gains for the regions that attract them.

The existence of these EDCs delivers a different kind of benefits. EDCs have a specific set of locational preferences, of which (i) proximity to the market, (ii) good multimodal accessibility, (iii) a favorable fiscal climate and (iv) a stable macro-economic and political context are the most important, besides cost levels and a well educated (multi-lingual) labor force. The fact that a over representation of these EDCs can be found in relative small economies like those of Flanders and the Netherlands can be explained from favorable scores on aforementioned locational choice criteria.

The better these EDCs succeed in efficiently offering necessary services to the logistical supply chain, the more the European economy benefits:

- For the goods that are imported the efficiency gains eventually boil down to lower consumer prices and higher quality levels and availability of goods
- For the goods that are exported the efficiency gains result in lower integrated transportation and production costs, greater availability and higher quality of goods, thereby enforcing the competitive strength of the manufacturers in the global playing field.

Based on corridor analysis, trade volumes and availability of modes and connection possibilities, the European landscape of EDCs was projected. As can be seen, various sorts of (dry) ports were discerned, and put together in a logical and functional logistics network, that derives its strength from not only looking to optimal locations for IDC's in inland locations, but also taking into account future short sea shipping and other maritime transport opportunities.

Transposing these European findings to the Indian context, it is clear where the future socio-economic gains can be expected:

- One can expect that Indian states will compete with each other for the location of EDCs. Given the level of autonomy of these states similar competitive behavior can be expected as can be observed between European countries.
- Growing imports and exports in combination with an overall growth expectancy for the Indian economy as a whole will lead to a fast growing number of EDCs, in combination with a growing scale of operations per IDC.
- In the early years, given the current existing differences between Indian and European income and GDP/capita, in combination with differences in the capital/labor ratios, one will expect that the regions that will locate these EDCs will see important centers of employment emerging, with relative modest addition to regional GDP.
- Not all Indian states will see the emergence of EDCs. Actual locations will be determined on regional specifics related to production and consumption patterns, the relative location compared to other Indian regions, and the connections and distances to the international trading and transportation routes.

VI. Role of Dry Ports in China

The most significant foreign logistics and transport /shipping companies (i.e., UPS, TNT, FedEx, Maersk and NYK) are and/or have been infiltrating into the Chinese logistics market by setting up joint ventures or acquisitions to achieve competitive positions in Chinese logistics and transport services.

In the meantime, the booming demand for transport logistics services has also led government agencies to systematically examine the situation, barriers and counter strategies in Chinese logistics development. Logistics could contribute to the development of Chinese economy by improving the level of service offered by intermodal transport to make it more attractive to shippers.

For this purpose, a significant directive entitled "Advisory opinions on ways to speed up the development of China's logistics" was introduced on March 2, 2001, by six ministries in China. These ministries have total responsibility for the administration of transport and logistics and comprise the State Economic and Foreign Trade Commission (SEFTC); the Ministry of Railways (MOR); The Ministry of Communications (MOCI), The

Ministry of Information technology (MOIT); the Civil Aviation Administration of China (CAAC); and the Ministry of Foreign Trade and Economic Cooperation (MOFTEC), which has merged with SEFTC to form the Ministry of Commerce (MOC2).

According to the government's policy guidelines (SEFTC, 2002) which outline the objectives and guiding principles for developing Chinese logistics, the core guiding principle for Chinese logistics development is to enable Chinese businesses and products to be internationally competitive. In order to achieve this goal, China will take feasible measures to encourage businesses, deepen their understanding of logistics and provide a competitive, high-quality integrated logistics services.

On the one hand, government agency is short of necessary framework, as well as preparation and means for the macro management of transport logistics. On the other hand, logistical enterprises are deficient in substance to invest in logistics, evidenced by lack of the same strategy existing in the planning and construction of logistics distribution centers, resulting in a basically disordered situation in the transport logistics market.

Second, the structure is currently by and large in an abnormal state. Over the past years, the achievements in construction of highways and railways can be obviously seen through the expansion of length. However, the intersecting nodal points (stations, depots etc) of transport lines, which are hard to quantify, have been ignored for a long period.

The third impeding factor comes from the macro administration regime. Affected by the planning economy regime, the functions of logistics are divided into different administration departments. Since the implementation of the "reform and opening up" policy in China, each sector related to transport logistics has made rapid progress. However, from a perspective of systematization, the amount of progress is uneven, with no optimum effect overall.

The fourth impediment markedly occurs at the macro economic level, i.e. the regulatory environment of industry. As mentioned above, quite more often than one ministry has responsibility for a business sector, and each can have a different perspective on its development and regulatory reform program.

The architecture of transport logistics is an integrated and coordinated system. The main function of the system is to accelerate the essential interaction and coordination among transport logistics enterprises, government agencies and relevant institutions at the national level. Intermodalism is at the core of most advanced logistics strategies used by the major transport companies in the world (OECD, 2001). In order to meet the international demand for integrated logistics services, China needs to restructure its transport system through encouraging a modal shift from sustainable modes of transport-particularly road transport to environmentally modes.

The development of Chinese dry port industry is just at the

beginning stage. The first Chinese dry port was established in 2002 at Beijing as cooperation between Beijing Government and Tianjin Port. Since then, more dry ports have been established in different regions of China. Influenced by major seaport of east coast of China, three groups of dry port is formed, located at the northeastern China, 12 provinces at middle and eastern China and the southern China. These three groups mainly contribute to Dalian Port, Tianjin Port and Ningbo and Shanghai Port respectfully.

1. Background of Chinese Dry Port Development

- a) The governments want to improve the efficiency of domestic logistic system by generating new inland transport joints.
- b) The seaport operators want to achieve more economic hinterland, customers and suppliers when compete with their competitors.
- c) The local governments need more opportunities to generate economic benefit and social welfare, as job position and private investment.

2. The two main developing modes of Chinese dry port industry

- a) Joint-venture between seaport operators and backland local authorities. Several seaports have built up joint venture companies with local governments, as well as countrywide nation owned rail operator to establish and operate dry ports to support their operation. Some well samples are listed as follow:

- Ningbo port established five dry port around it within Zhejiang Province, as Jinhua, Yiwu, Shaoxing, Yutao and Quzhou. For the geographic and economic locations of these dry ports, they annually supplied almost 1 million TEUs of cargo since 2005. Ningbo port has thus taken over 50% of total cargo originated from Zhejiang Province under the intense competition with Shanghai Port. Moreover, these dry ports attract more cargo from other provinces. Over 60% of total TEU handled by Ningbo port are originated outside Zhejiang Province.

- Tianjin Port has generated 12 dry ports following this strategy in different province to directly enter the market by picking cargoes as “door to door”. This move allowed Tianjin Port to increase its hinterland to 4.5 million km² with only 37 km² terminal area. The value of cargo from the economic hinterlands to Tianjin port takes 54.7% of total cargo value in 2005 and the percentage is continually increasing after the joint venture dry ports are established.

- Some dry ports are built up due to the cooperation between seaport operators and local authorities in Northeastern China, including provinces of Heilongjiang, Jilin and Liaoning. For example, one dry port with the annual handling capacity of 100 thousands TEU has been generated by Yingkou Port and Shenyang City. Several dry ports with the similar capacity related to main seaport, as Dalian Port, have been established or are proposed to generate in this region.

- b) Dry ports established by backland local governments.

The local authorities of Chinese backland regions established dry ports cooperating with railway operators chasing for the competitive advantage in domestic supply chain and relative welfare. A multifunctional dry port will be successfully constructed in 2010 in Shaanxi province as a major joint to complete the domestic supply chain between the western region of China and the seaports located in the eastern China. Dry ports are also proposed to build up in Jiangxi Province under cooperation contract with several seaports, as Shenzhen Port, Ningbo Port, and China Rail.

3. Ownership of Chinese dry ports

As the seaports of China, very most of Chinese dry ports are owned by nation owned companies. The generation of dry ports in China is always directed by local governments. The local nation owned companies always generate a new company with rail operators and/or seaport operators to control and operate the dry port. The investments of infrastructures construction are run by local authorities. There are also some but rarely private investments in the Chinese dry ports' establishment, but the private players are more like operators rather than owners.

Given the situation now, there must be an intensive competition in the Chinese future dry port industry as more and more local authorities want to establish their own dry port. The problem of repeated investment will be a necessary to solve. Relative policy for the dry port industry needs to be announced to strengthen the base of this industry and to supervise the development of this industry.

VII. Conclusion

It is obvious from the above that dry ports form a part of a national development plan. The success of a dry port is a direct function of coordination between several organizations. Some of these organizations could be state-owned, government agencies or in the private sector. The government dry ports also need to operate within national budgets which also govern highways, railways and sea port construction. As such, the relationship between the various organizations, the objectives and the budgets of all these bodies should not only be aligned, but also formalized.

In developing countries, it would be difficult to attract initial capital investment entirely from the private sector due to high risks and low rates of return. As such, the government needs to make initial investment or at least majority of it. The quantum of government investment could subsequently be diluted. It has been noticed that the efficiency of the dry port is usually restricted if the government fully owns and operates such facilities. In theory, it also reduces the chances of profiteering and discrimination amongst the users. The government is also handicapped by being not sensitive enough to the fluctuating demands of the users. By its very nature, it is short sighted to the needs of the users.

The solution to this problem appears to attract fair quantum

of private investment from the private sector and allowing them to have operational control of dry port activities. Simultaneously the government should continue to supervise the overall performance of such operators. In order to retain equality in treatment of users, it would also be ideal as well as practicable to hand over operational control of day to day operations of dry ports to more than one operator either locally or regionally.

Privatizing partially in later stages of dry port development becomes more relevant when different kinds of skills become imperative for their sustainable development. A management structure suited to the size of a facility would be more useful rather than a central top heavy management which increasingly will lose control over the organization and lead to additional bureaucracy, red tape and cost burden. In the era of post-financial tsunami, it is difficult to guess the future of globalization process as understood by all in the past. There is no doubt that the course of this process is bound to be altered and the pace of it might also suffer deceleration. But it is also certain that globalization as a phenomenon is here to stay and the survival of global markets as an entity is not at stake. In order not only to grow but even to survive local businesses have no option but to synchronize these activities and dovetail them into global supply chains.

With a convergence of macroeconomic trends, it will not be possible to raise tariff and nontariff barriers once again as they existed in the past. The revolution in logistics industry itself has been evidenced by price deflation and cut throat competition. The demand for precision, speed and customer needs have become paramount for the very survival of global businesses. It has led to a rising demand for integrated logistics which encompass a wide array of activities from raw material sourcing to processing of goods to final market distribution. The dry ports are expected to play this very role with their vantage locations, huge capacities, built-up infrastructure, and invaluable knowledge of local markets, strong financial position and experience garnered over the years.

Acknowledgement

This research is partially supported by The Hong Kong Polytechnic University Research Funds J-BB7D.

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