

RETROSPECT AND PROSPECT OF LOGISTICS DEVELOPMENT IN CHINA

WANG Wei

Development Research Center of the State Council

UNDER-DEVELOPMENT: OVERVIEW OF CHINA'S SERVICE SECTOR

Development of the service sector has been one of the important policy focuses among Asian countries, especially in China. This is not only because the service sector contributes greatly to an economy in terms of GDP and employment, but also because the development of the service sector has a great influence on an economy's efficiency and international competitiveness.

After more than twenty years of rapid development, China ranks at the top among the world's economies in GDP quantity. However, if we look into the quality of the economy in terms of its structure, efficiency, and international competitiveness, China appears comparatively weak, even lagging behind some of the developing countries. The under-development of the service sector is undoubtedly one of the significant reasons.

The service sector has been a major component of China's economy, the second largest contributor to output after manufacturing. The service sector's contribution to GDP rose from 23.7 percent in 1978 to over 34 percent in 1992 and dropped slightly to 33.6 percent in 2001 (Figure 1).

In nominal terms, the sector's growth turned onto a slow track since 1992 and especially in the late 1990s (Figure 2). In international experience the value-added share of the service sector to GDP has tended to rise gradually along with the development of an economy. In China, however, in real terms (constant 1990 prices), the share of value added by the service sector actually fell from 31.3 percent of GDP in 1990 to 28.4 percent in 1999. Over the same period, the value-added share of industry grew vigorously from 41.6 percent of GDP to 55.7 percent, while the share of agriculture contracted sharply from 27.1 percent of GDP to only 15.8

percent. At the industry level, service input per unit of output in most industries also declined in the decade of the 1990s. For example, from 1992 to 1997, service input in the consumer goods manufacturing industry fell from 15.7 to 11.5 percent (China Input-Output Table, 1997. NSB).

FIGURE 1
Sectoral Composition of GDP, 1978-200

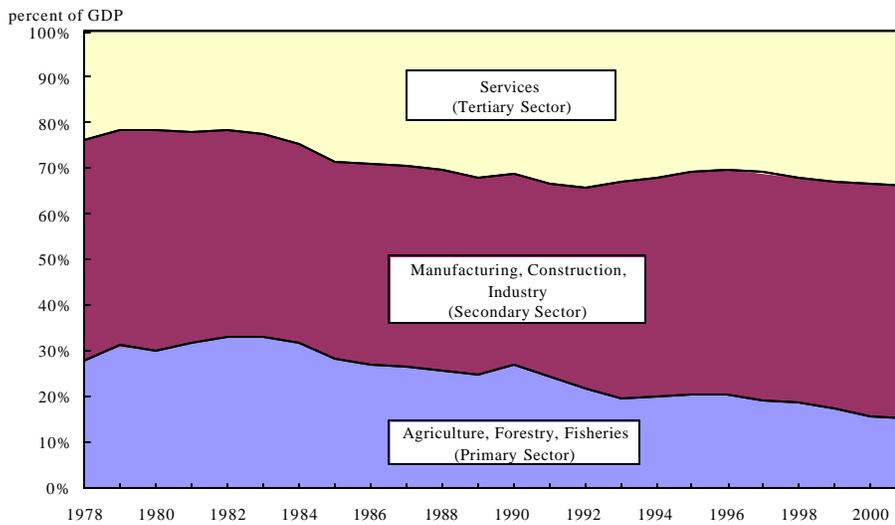
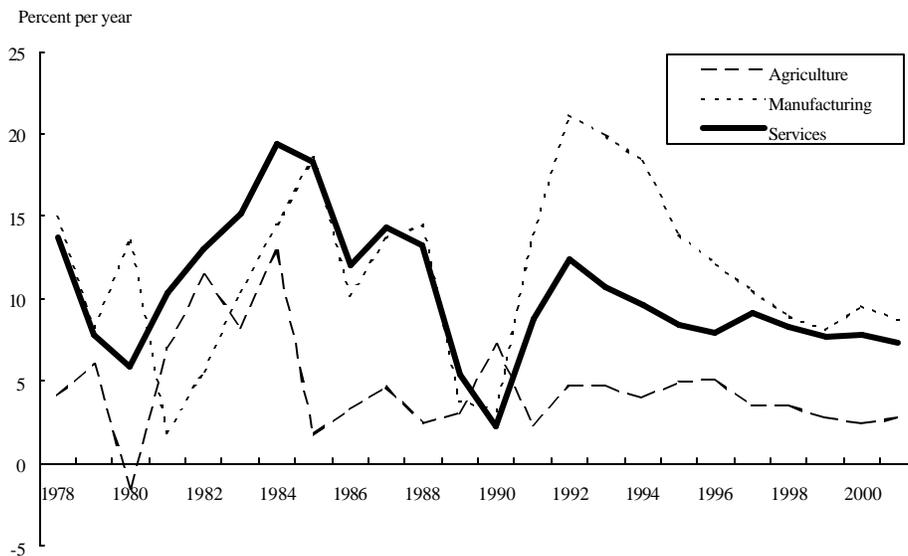


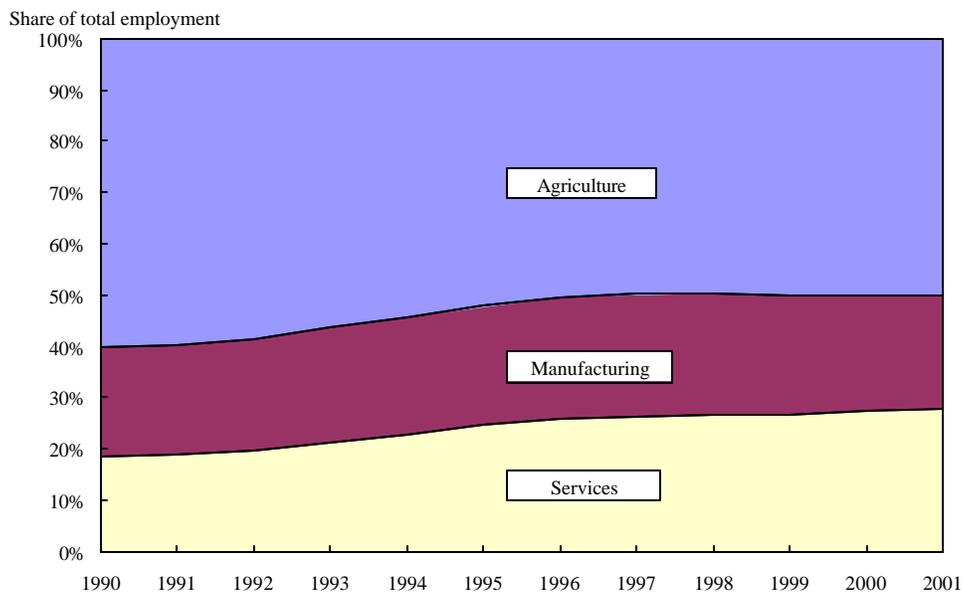
FIGURE 2
Growth Rates of GDP by Industrial Sector, 1978-2001



While the development of services tended to slow, the price index for consumer services has risen persistently since 1990. In fact, the 16.8% average annual increase in service prices was double the rate of the rise in the overall consumer price index (7.5 percent per annum). Prices of services even rose at about 10 percent per year during 1998-99 when the overall consumer price declined as a result of weak aggregate demand. Paradoxically, the persistent increase in the relative price of services in the 1990s was not accompanied by a rise in the sector's share of aggregate output.

In contrast to the trend in the service sector's share of output, the sector's share of total employment actually rose significantly during the decade of the 1990s, from 16.4 percent in 1990 to 27.7 percent in 2001 (Figure 3). The employment share of the industrial sector, on the other hand, did not gain any ground, hovering around 15 percent over the last decade. This suggests that the employment elasticity of services has risen significantly while that of industry (mainly manufacturing) declined. Services are well poised to become the employment generator in the economy.

FIGURE 3
Employment Composition of China's Economy, 1990-2001



The under-development of China's service sector also shows up in international comparisons. Most developing countries with a level of per capita income similar to China's have a substantially higher share of services in the national economy (Table 1). For instance, according to the World Bank's *World Development Indicators* 2000, in China, with per capita income of US\$3,291 (purchasing power parity measure) the service sector contributed 33 percent of GDP compared with 58 percent in Jamaica which had per capita income of US\$3,344 and 51 percent in Morocco with per capita income of US\$3,188.

TABLE 1
Per Capita GDP and Service Sector Share in Selected Developing Countries

	Per capita GDP (US\$, PPP)	Service Sector Value Added/ GDP (%)
India	2,060	46
Indonesia	2,407	35
Jordan	2,615	71
Albania	2,864	21
Sri Lanka	2,945	51
Ukraine	3,130	51
Morocco	3,188	51
China	3,291	33
Jamaica	3,344	58
Philippine	3,725	51

Source: World Bank Group, *World Development Indicators*, 2000.

In 2001, traditional commerce, which includes wholesale and retail trade, catering, and hotels, made the biggest contribution to service sector value added (28 percent) followed by finance, insurance and real estate; education, healthcare and community services, transportation and communication; and public services). Compared with the structure of services in OECD countries, the proportion of traditional service industries in China is high and the share of modern service industries is low. Modern service industries especially knowledge-based services like financing, insurance, and business services were growing fast internationally and they can significantly improve the efficiency and international competitiveness of an economy.

CURRENT STATUS AND CHARACTERISTICS OF THE LOGISTICS INDUSTRY IN CHINA

With the rapid development of science and technology and the extended boom in the global economy, logistics service has emerged as a new economic sector worldwide. Logistics activities, that is, planning, implementing, and controlling the flow of goods, are essential to modern industrial enterprises, but only recently has the provision of logistics services—organizing and managing the flow of goods through the supply chain—become identified as an industry in its own right. Nowadays, the logistics service industry is recognized as a key component of a nation's economic infrastructure, separate from transportation or information technology. The level of development of the logistics service industry is one of the most important indices of a nation's level of industrialization and its overall competitiveness. Logistics is regarded as a catalyst for the development of an economy.

Compared with its counterparts in more developed countries, the logistics industry in China is still in its infancy.

Incipient Demand for Professional Logistics Service

In recent years, China's enterprises have come to recognize the "third source of profit" existing in the logistics industry. Domestic enterprises are eager to optimize their management of logistics activities and to reduce their logistics costs. A pilot project focusing on the optimization of logistics management within the firm has been implemented in Shandong province since 1998 to promote the concept of a modern logistics industry. The project has attracted wide attention and acceptance by many enterprises. The interest in this project shows that the focus of logistics activities in China is still the management of logistics within enterprises.

At the same time, though, demand for independent, externally provided, logistics services, or so-called third-party logistics (3PL), has emerged in China and shown a strong growth trend.

By far the greatest demand for efficient professional logistics services comes from the multinational companies (MNCs) that have manufacturing, distributing, and purchasing operations in China. These MNCs constitute an important market base for promoting the development of the logistics service industry in China.

Some blue-chip domestic enterprises—Haier Electronics, Tsingtao Brewery, and Shanghai Baoshan Iron and Steel, for example—are adding to the demand for 3PL services. In expanding their markets, these key domestic companies began to experiment with utilizing outside logistics service providers to improve logistics efficiency, usually starting with the optimization of their intra-firm logistics systems. Finally, considerable demand for logistics services in China is coming from such newly established economic sectors as privately operated enterprises, express delivery service providers, and e-commerce related businesses.

Emerging Professional Logistics Service Enterprises

Three types of logistics service firms have become established in China in recent years:

- International logistics companies, which provide both extended logistics services to their original customers to help them build businesses in China and outsourced logistics services to other professional service providers in the China market, such as Maersk, UPS and TNT.
- Established transportation, storage, or wholesale companies that have transformed into logistics service providers. Leveraging on their logistics expertise, customer base, facilities, and business networks, some traditional companies have gradually become modern logistics service companies by expanding the scope of services they offer. For instance, with Motorola (China) as a customer, the Tianjin Branch Company of China Foreign Transportation Group (Sino-Tran) had to constantly adjust and expand its service domains to meet the needs of Motorola's market expansion activities and logistics requirements. As a result, the one-time local air cargo shipper became a nationwide integrated logistics service provider. Now it has become one of the primary logistics service providers in China.
- Professional logistics service start-ups. Examples of such firms include PGL Logistics Enterprise Group based in Guangzhou and Hua-Yuntong Logistics Company in Beijing. The success of these firms rests on their flexible strategies and their profound and accurate understanding of professional logistics services. These firms grew rapidly in an environment of market competition and have become a not insignificant part of China's logistics industry.

The increased competition from specialized logistics enterprises has prompted many firms to diversify the range of services they offer. Professional logistics providers that offer

combined cargo forwarding, merchandise distribution, multi-modal transportation, warehousing, and consignment service have developed quickly. For example, China Foreign Trade Transportation Group (SinoTran) can provide such professional logistics services as customs clearance, merchandise inspection, and cargo invoice management. Nevertheless, streamlined logistics services or one-stop logistics services are just starting to develop and there are few successful examples.

Developing Infrastructure and Facilities for Logistics

The facilities and equipment that are the necessary foundation for the logistics industry have improved considerably in China in recent years.

China has built a comprehensive transportation system comprised of railway, highway, water, and air modes of distribution. It has made great progress in the construction of transportation lines and centers and in the development of vehicles and equipment as well.

Significant progress has been made in developing warehouse facilities in recent years, and the amount of capital investment keeps growing rapidly. In 1998, capital investment for inventory infrastructure was 6.58 billion RMB, which was more than 14 times the amount in 1990 (420 million RMB). Commerce, materials, and foreign trade departments have also constructed their own cargo distribution centers in addition to the warehouse facilities set up by transportation departments.

Currently, China's communications network has over three hundred thousand kilometers of laser cable. This cable is the backbone for a high-capacity digital transmission network, which is augmented by digital microwave technology and satellite transmission. The total capacity of the four major communications networks—China PAC, China DDN, China Net and Public Relay Net—has reached 0.62 million ports and covers all cities, 99 percent of counties, and most rural areas. At the same time, these networks provide access to the global Internet, which makes the application of EDI, ERP, MRP, and GPS possible. To some extent, the communications network has improved the quality of scientific information management and

the efficiency of logistics activities.

The extensive adoption of modern, automated equipment has dramatically improved working conditions and procedures in the packaging and conveying sectors. By now, China has developed hundreds of types of automated packaging and modern conveying equipment. Production of such logistics equipment by the manufacturing industry is estimated to be between 40 and 50 billion RMB every year.

Growing Government Interest in Logistics

Developing the logistics industry is currently a high priority for local governments in Shenzhen, Beijing, Tianjin, Guangzhou, and Shandong and they are adopting policies to assist the industry. For example, Shenzhen has listed the logistics industry as one of the province's three primary industries and has established preliminary policies to support its development. Beijing has carried out systematic research and detailed planning for logistics facilities; Tianjing is also working on establishing guidelines for the modern logistics industry.

Central government departments, such as the State Development and Reform Committee (the former State Economic and Trade Committee and State Planning Committee), the Transportation Ministry, and the Commercial Affairs Ministry (formerly MOFTEC) are all working actively on various policies to support the logistics industry.

PROBLEMS AND CONSTRAINTS ON CHINA'S LOGISTICS INDUSTRY

Constraints on Market Demand

Influenced by the long-standing centrally planned economic system, most Chinese enterprises still retain the outdated management patterns of 'small-size but full-function' or 'large-size and full-function'. Many enterprises still operate on the basis of self-sufficiency in all processes from materials procurement to product distribution. According to one industrial survey, for raw materials, 8 percent of logistics activities were provided in-house and 71 percent by supplier transportation and only 21 percent of raw materials logistics activities were outsourced

(Table 2). For product distribution activities, the corresponding shares are 43 percent in-house, 36 percent by supplier transportation, and 21 percent by 3PL providers. For commercial enterprises, the share of in-house service and supplier-transportation is 74 percent, and the 3PL service is 17.6 percent. Most enterprises still maintain a large number of logistics facilities, which constitute a considerable proportion of their total assets. This pattern of self-sufficiency is one of the primary constraints on the development of the logistics industry in China.

TABLE 2
Distribution of Logistics Provision by Stage of Activity
(Percent)

	In-house	In-house & 3PL jointly	Supplier	Outsourced (3PL)
Raw materials	8		71	21
Finished goods	43		36	21
Commercial enterprises		74		18

Strong potential demand for outside logistics services arises in conjunction with the process of optimizing in-house logistics management. Even though the outsourcing of inter-enterprise logistics activities is shaping up, various problems prohibit enterprises from outsourcing their logistics activities. For one, when transportation vehicles, storage facilities, logistics equipment, and working staff all belong to different enterprises, it is hard to coordinate them efficiently. In addition, enterprises have little incentive and few methods to reduce operating costs and improve logistics efficiency. Because they cannot effectively divest their low-efficiency facilities and extra personnel, enterprises are forced to maintain their existing logistics activities and management procedures. These problems act as a constraint on the market demand for professional logistics services.

Constraints from Service Formats and Management

The quality and efficiency of services offered by the professional logistics services that are already operating in China need improvement. First, they offer only relatively simple logistics service formats. Currently, most logistics service companies can provide such basic services

as conveying and storage but they are not capable of providing value-adding services such as consignment, logistics information, inventory management, and cost control. They are still far away from providing high-level services such as logistics scheming and systematic logistics services.

Second, currently, most logistics service providers, including traditional transportation and the new-style professional logistic service providers, are too small to be competitive. They need to expand their business networks. For example, only a very few of the 2.74 million different transportation service providers nationwide, such as Sino-Tran, own more than 100 vehicles. The average number of vehicles owned per service provider is a mere 1.43.

Third, they need better management. Most logistics service providers lack systematic internal management rules and necessary standards for customer service.

Constraints from Logistics Infrastructure

Logistics facilities and equipment in China have improved considerably, considering the increasing demand arising from the sustained development of the economy, but these facilities still lag far behind developed countries. Inadequate infrastructure keeps the logistic industry from becoming more efficient.

Small Scale of the Transportation Infrastructure

The overall scale of China's transportation infrastructure appears quite limited when looked at against the country's land area or population. The transportation network measures only 1,344 kilometers per 10,000 square kilometers and only 10.43 kilometers per 10,000 inhabitants. This compares with 6,869 km per 10,000 square kilometers and 254 km per 10,000 inhabitants in the United States; 14,680 km per 10,000 square kilometers and 66 km per 10,000 inhabitants in Germany; 5,404 km per 10,000 square kilometers and 22 km per 10,000 inhabitants in India; and 1,886 km per 10,000 square kilometers and 118 km per 10,000 inhabitants in Brazil. Thus, the transportation infrastructure in China is meager compared with that in other developing countries as well as in developed countries.

Inadequate Logistics Centers

For a long time, China neglected the construction of transportation infrastructure, public storage facilities, and modern logistics or distribution centers. Inter-enterprise storage facilities could not attract enough capital investment. Although plans for major highway construction throughout the country have been drawn up, they have only been implemented in Shanghai and Shenzhen so far. Air cargo shipping bases are yet to be constructed. China also lacks logistics centers that can connect different transportation modes and serve regional economies. The deficiencies of logistics centers seriously affect the efficiency of transportation.

Low Technical Level of Logistics Facilities and Equipment

China is just beginning to develop a high-volume, high-speed, and automated railway transportation system. It also needs more high quality highways. Only 1 percent of the nationwide road system consists of vehicle-only highways; while non-standard highways make up to 20 percent. Port facilities for ocean-going vessels is far behind current international standards. Although some recently constructed harbors meet the standards in developed countries in the 1980s, most others can only match the standards of the 1960s and 1970s. With only 14 cargo planes in total, China's civil air cargo shipping capability is seriously lacking.

Inefficiency Caused by Regional Imbalance

There is a serious imbalance in availability and quality of transportation facilities between China's eastern and western regions. Furthermore, the lack of cooperation and coordination among transportation modes creates serious market segmentation. Excess competition for the same cargo business affects the ability of each mode of transportation to achieve economies of scale.

Non-standardized Logistics Facilities and Equipment

Lack of standardization of logistic facilities and equipment is a key factor constraining the development of the logistics industry. The level of standardization is closely related to various logistics functions, and ineffective linkages among different factors significantly limit any

improvement in logistics efficiency. First, incompatibility among different transportation modes, such as different container standards for ocean and railway shipping, limits the development of inter-modal shipping. The lack of standard containers for inter-modal transportation reduces the efficiency of foreign trade and retards its development. In addition, differences among logistics facilities in their standards for such things as docking, shipping, and assembling equipment affect the versatility and role of docking equipment in the whole process of logistics service, and they block the improved automation of the conveying, storing, and assembling processes. Finally, although basic packaging standards have been established, the lack of effective linkages between packaging and other logistics standards affects the efficient use of various transportation vehicles and inventory facilities.

Inadequate Application of Information Technology

China also has to improve the application of information technology. First, the technology used to manage information within enterprises is relatively primitive. Bar code technology, GPS, MRP, ERP, and other logistics software are not widely employed. Second, China lacks the necessary platforms for public exchange of logistics information. For example, Chinese enterprises have not yet widely adopted the logistics information system based on EDI and Internet technology.

Constraints from the Economic System

Developing the logistics industry, requires a base of adequate market demand, active market participants, and well-established logistics facilities. More important, a supporting economic system is necessary to ensure the efficiency of the market mechanism, the smooth operation of logistics activities, and the healthy growth of the logistics industry.

The Current "Blocked" Management System

The current system of economic management poses a formidable obstacle to the development of China's logistics industry. For example, different government departments have authority over transactions depending on the mode of transportation; at the same time, there is another vertical

system of management with various levels extending from the central government down to local authorities. This sort of 'blocked' management system creates overlapping administrative scope and hampers efficient cooperation and coordination among all involved departments. As an example, Table 3 illustrates the various aspects of government administration for foreign logistics providers in China.

TABLE 3
Regulatory Framework by Sector

Sector	Foreign Participation	Licensing Authority
Int'l freight forwarding	Regulated	MOFTEC
Air freight forwarding	Regulated	CAAC, MOFTEC
Logistics center	Encouraged	MoC, MOFTEC
Domestic trucking	Regulated	MoC, MOFTEC
Consolidation	Regulated	MoC, MOFTEC
Warehousing	Encouraged	MoC, MOFTEC
Custom brokerage	Heavily regulated	CGA, MOFTEC
Shipping line	Regulated	MoC, MOFTEC
Airlines	Heavily regulated	CAAC, MOFTEC

This compartmentalized system also separates logistics processes that should be integrated. Such a system is not suited to the requirements of the logistics industry; indeed, it exerts measurable drag on the industry instead.

First, it hampers the coordinated development of various channels of logistics service. For example, the system encouraged each different mode of transportation to develop independently of the others, resulting in significant disparities in technical standards and service norms among modes and creating problems in choosing reasonable transportation methods. Because many enterprises have to choose a single mode for all of their business it is difficult to realize a modern logistics service based on multi-modal transportation.

Second, the existing system causes serious waste of resources. By making it hard to coordinate planning and infrastructure construction it leads to duplicated construction and excessive competition. This kind waste of resources affects the coordinated development of the whole logistics system. At the same time, it means there are no incentives for capital investment to coordinate different transportation modes, to connect national and local systems,

and to link different regions. As a result, it restricts the development of comprehensive cargo shipping centers and logistics service centers that are important components of the logistics industry.

Third, with the territorial mentality that exists in different departments, sectors, and regions many regulations and rules are established in favor of the regulators themselves, and this causes enterprises to seek coverage from administrative departments. This kind of unfair competition limits the growth of integrated professional logistic service.

The Dual Role of Government

Due to historical developments, in quite a few sectors the government has a dual role—as both regulator and regulatee. In the railway transportation sector, for example, the administrative department itself is a dominant enterprise. The department in charge of harbor administration is also a primary enterprise in its sector. This system impedes the standardization of the logistics industry, the impartiality of administrative function, and the fairness of market competition. It discourages enterprises to improve their competence.

Lack of Explicit and Effective Regulations

The vested interests of individual departments make illogical and contradictory regulations commonplace and make it hard to achieve regulatory consistency. For example, the pricing principle for newly developed standard container services is the ‘new line—new fee, better quality—higher fee’ rule, while other modes are held to a much lower fee structure. The disparity restricts the development of standard container business, and therefore, restricts the development of various logistics services based on multi-modal transportation. Discrimination also exists in tax rules. Logistics enterprises are subject to a higher tax bracket. Government capital investment policies favor infrastructure construction, while financial support for logistics education and research is inadequate.

Constraints from Research and Human Resources

China is far behind other economies in logistics research and logistics human resources. Only

a small number of institutes undertake logistics research. The deficiency in human resources is seen mainly in the lack of standardized training channels. Currently, about ten universities, a mere one percent of universities in China, offer professional courses in logistics. Furthermore, logistics education is mainly limited to the undergraduate level, and short-term programs provided by enterprises and by vocational schools are still major sources of training for logistics professionals.

PROSPECTS FOR CHINA'S LOGISTICS INDUSTRY

Key Sector for Economic Growth in the 21st Century

The logistics industry has entered a full-scale rapid growth stage as a new service sector. Although the logistics industry in China is still new, it has shown strong growth and potential in certain fields and regions.

China's logistics industry will grow based on two major market segments. First, the 3PLs will continue to grow rapidly with non-state-owned economic entities as customers. Second, having optimized their internal logistics management, domestic blue-chip companies will gradually develop the demand for external logistic services. The strong market demand for efficient and professional logistics services from these two types of economic entity will become the key market basis for the growth of China's logistics industry. Moreover, logistics services for individual consumers, such as express merchandise delivery and distribution services, will also grow very fast. The rapid development of logistics services is an essential requirement of market competition and continuous business innovation. It indicates that China's quality of life has improved significantly in the last few years.

The professional logistics industry in China is attracting a growing number of new participants. First, the opening of such sectors as trucking, distribution, and warehousing facilities to foreign competitors with accession to the WTO makes it possible for international logistics companies to provide diversified services in the China market. Second, efficient organization and advanced management give private logistics-service firms obvious advantages

in optimizing various logistics resources, and they have expanded scale and market share remarkably. This will be the most dynamic sector in China's future industrialization. Third, some traditional state-owned transportation, warehousing, and wholesale companies are becoming strong contenders in the logistics industry by building on their existing services to expand into other logistics services. The winners gradually became professional logistics service providers.

From the aspect of regional market development, the logistics industry is growing more rapidly in developed and dynamic regions. Coastal cities, central cities, and other large cities are becoming major bases for regional logistics markets.

We can conclude that as the development of logistics in China accelerates and the logistics service industry will have greater and greater significance for the national economy.

Logistics Improves Overall Efficiency for Society as a Whole

Total logistics costs in China account for about 16.7 percent of GDP, which is relatively high compared with developed countries. This indicates the inefficiency of the logistics industry at present and at the same time it shows the possibility for large savings on logistics costs.

Since 1998, Shandong Province has implemented a pilot project focusing on the optimization of intra-firm logistics management to promote the development of a modern logistics industry. Prominent corporations like Tsingtao Brewery, Haier Electronics, DongDa Group participated in the experiment. By consolidating logistics resources and facilities, improving the merchandise distribution system, and employing third-party logistics providers, the firms in the project reduced the cost of capital in their logistics operations and reduced their inventories of raw materials and products. They achieved distinct success in expediting the transformation from traditional inventory-driven enterprises into logistics-driven enterprises. For example, in 1999, Tsingtao Brewery reduced its overall logistics costs by 39 million RMB, of which 35 million RMB came from a cut in capital requirements due to the reduction in required warehouse space from 70,000 to 29,600 square meters. In addition, the company

realized a 1.9 million RMB savings in storage expenses and another 1.9 million RMB savings in local transportation costs.

According to World Bank estimates, promoting logistics services, which results in more efficient transportation, more rapid commercial cycles, and reduced capital demand as well as interest expenditures, can improve an economy's overall logistics efficiency considerably. If China could reduce logistics costs to 15 percent of GDP during the Tenth Five-Year Plan period, this would result in a direct annual saving of up to 2.4 trillion RMB, which would bring considerable economic benefits to enterprises and to society as a whole.

Logistics Will Promote the Development of All Other Industries

First, the development of the logistics industry will help the manufacturing industry to reduce costs and enlarge economic benefits. At the same time, it will encourage a change from the traditional (and inefficient) enterprise structure—"small but comprehensive" or "big and comprehensive"—and this will enhance the core competence of the manufacturing industry.

Second, the development of the logistics industry will accelerate the growth of commercial corporations. With the further reformation of the distribution system, enterprises that offer traditional wholesale and storage-transportation services will no longer meet the needs of the continuously developing market. These firms will have to upgrade and offer new services in the marketplace in order to remain viable.

Third, the logistics industry will promote innovation and breakthroughs in transportation service modes as well as the development of traditional transportation corporations.

- Logistics service calls for the combination of existing transporting modes in order to provide the best transportation plan and to achieve maximum savings in time and cost. This will foster the development of new transportation services, especially the development of multi-modal cooperative transportation.
- While the focus of traditional transportation providers is only on capacity, the focus of logistics service is external market demand. Thus, the development of the logistics industry will initiate a change in management approach.
- As a service sector, the logistics industry should develop in conjunction with the manufacturing, trade, and consumer sectors. Traditional transportation service providers will need to introduce modern administrative and technical tools, and improved management and technical capability will encourage new developments.

Finally, the development of the logistics industry can boost the growth of related industries such as logistics facility manufacturing and Internet based e-commerce.

Logistics Development will Improve China's International Competitiveness

A strong logistics industry and advanced logistics infrastructure will create a more attractive environment for investors and draw more foreign enterprises and international capital to China. The present level of logistics facilities and service quality discourages many international corporations from choosing China as a new market to enter or a new location for a manufacturing base.

More important, with China's entry into the WTO its integration into the world economy will accelerate. Domestic enterprises will confront intense competitive pressure in both domestic and international markets. The significance of developing the logistics industry is no longer limited to that industry alone. All sectors of the economy will benefit from an efficient logistics environment and high-quality logistics services and in this way the development of the logistics industry will enhance overall economic competence.

POLICY RECOMMENDATIONS TO PROMOTE DEVELOPMENT OF THE LOGISTICS INDUSTRY IN CHINA

In line with global economic trends and to support further progress in the domestic economy, the logistics industry will be a key economic sector for China in the twenty-first century. The development of the logistics industry will help improve the quality and efficiency of the economy overall, enhance the competitiveness of individual enterprise, of various regions, and of the national economy, and foster coordination among all industries. Administrative departments must establish positive, supportive policies to guide and promote the development of the logistics industry.

Make Upgrading the Logistics Industry an Explicit Policy Objective

China's logistics industry has long way to go to catch up with its counterparts in developed

countries. Given the existing problems and considering the overall requirements for the country's future economic development, the logistics industry should follow the principle of "market as guide, enterprise as main body, and demand as a base" and aim to reduce overall logistics costs, improve efficiency, and promote the healthy development of the national economy. With such a premise, China should adopt appropriate regulations and construct fundamental facilities that aim to establish over the next 5-10 years an integrated logistics service system which would meet the requirements of the economy's continuing development. To reach this objective, the following efforts are necessary:

- Foster a group of competitive logistics enterprises that have a high technology level and a rational scale,
- Build a modern, competitive logistic facilities system that is compatible with the present economic system in the major metropolises and economic regions, and
- Establish an appropriate regulatory, legal, and political framework.

As soon as possible, the important position and key role of the logistics industry in the future development of the economy should be established as a matter of national policy. This policy direction can be embodied in the Tenth Five-year Plan and in the Long-term Plan for 2015. In addition, following the example of the Japanese government's "Principles for Implementing Logistics Policy", the Chinese government can issue similar statements to attract public attention to promote the development of the logistics industry.

Create an Administrative Environment Favorable to the Logistics Industry

To create an administrative environment conducive to developing the logistics industry it is imperative to change the outdated, compartmentalized framework of industrial management and regulation, strengthen coordination among administrative departments, and establish a normative policy for development.

Establish Coordination among Administrative Departments

At present many government departments (including SDRC, Transportation, Railways, Airlines, CAM, Customs, General Bureau for Business Administration, Industry, and Commerce are involved in managing logistics functions and components in the transportation, packaging,

storage, distribution, and delivery sectors. Each of these departments is actively promoting the development of the logistics industry. In order to avoid discrepancies in policy making, it is necessary to establish a coordination mechanism to ensure effective cooperation. Two alternatives are available now. One is to let a comprehensive administrative department take the lead and entrust it with the task of coordination. The other is to set up a committee consisting of representatives from each relevant department to be responsible for studying, making, and coordinating logistics-related policies. A comprehensive administrative department of the government could be charged with the implementation of these policies.

Adjust logistics administration system and related regulations.

First, it is necessary to eliminate policy restrictions on the logistics industry from the regulatory system. In particular, we must eliminate those regulations that counteract the principles of fair competition and that limit freedom of market entry. Then, we must create a favorable political environment for the logistics industry. Second, it is necessary to establish related administrative policies suitable for a socialist market economy system to ensure the healthy growth of the logistics industry.

Based on procedures discussed above and taking the policy objective into consideration, policy support should be extended in the following areas,

- Financing for construction of logistics infrastructure and renovation of logistics facilities,
- Access to land for the construction of logistics centers,
- Pricing for logistics and transportation services, and
- Business registration process.

Foster Enterprises' Potential Demand for Logistics Services

The development of the logistics industry is based on improved management quality in individual enterprises. The experience of Shandong Province provides some lessons in how to support the optimization of intra-enterprise logistics management. Administrative departments should publicize modern logistic management ideas, guide enterprises to strengthen their logistics management, and encourage them to withdraw from inefficient activities. By

improving logistics operations and management within individual enterprises, China will gradually realize the integration of logistics activities and lay a solid foundation for future market demand.

Promote the Development of Professional, Comprehensive, Large-Scale Logistics Service Providers

Various policies should be adopted to foster the development of professional logistics service providers.

- Encourage enterprises currently involved in transportation, storage, cargo delivery, and wholesale distribution to expand the scope of their services according to their particular strengths, business concentration, and market demand, and to transform into partial or full-fledged logistics service providers.
- Attract diversified capital investment, based on the regulatory standards for market entry.
- Adjust registration procedures and tax rules to encourage multi-regional business operations.
- Breed large-scale logistics enterprises by encouraging enterprises with certain market advantages and scientific management to become industry leaders.

Promote Information Systems and Standardization within the Logistics Industry

First, encourage the development of logistics information systems and provide platforms for the development of the logistics industry. Administrative departments should encourage enterprises to adopt advanced technology like ERP and MRP to improve the quality of management. This would help enterprises communicate and share information and encourage them to use Internet technology. In the longer run it would foster the development of information platforms and make possible the efficient communication of information.

Second, authorities should accelerate the standardization process. Based on the existing problems, following the global trend, administrative departments should work more energetically to bring about standardization in the logistics industry. On one hand, they should work to standardize logistics terminology, measurement criteria, technology standards, data transfer formats, operations, and service norms. On the other hand, they should strengthen the coordination of the standardization process, review existing rules, and replace outdated criteria

with new standards. In particular, they should examine the most frequently used criteria, for such things as docking equipment, containers, assembly facilities, and bar code technology, and update them if necessary. Then, they should standardize all the criteria, as a means to improve the efficiency of information communication.

Promote Research and Human Resources to Raise the Scientific Level in the Logistics Industry

Logistics is a technology-intensive industry, both in terms of applying the latest advanced technology and in terms of creating unique logistics technology. Currently, China is relatively weak in logistics research. The government should guide research projects and encourage cooperation between enterprises and research institutes in order to promote the development and application of logistics technology.

Multi-level, diversified logistics education is the major factor in forming a rational talent structure and in improving management. Administrative departments should encourage institutes to setup relevant courses based on market demand and to train administrative professionals for the logistics industry. In addition, the authorities should also guide enterprises and local educational organizations to provide training programs at different levels and establish a professional qualification system, which would evaluate individuals' educational background, specialization, and particular skills.

Strengthen the Role of Logistics Associations

At present, China has about ten major national associations in the logistics industry, including the China Transportation Association, China Logistics Association, and China Warehouse Association. We should take advantage of these existing associations as important connectors between the government and individual industries by using them to encourage member enterprises to improve management and service quality and promote the integration process. The trend in developed countries is toward consolidation of logistics industry trade associations, as a consequence of market selection and the continuing development of the industry. In

China, however, the logistics industry is in an earlier stage and no association has established a dominant position or won wide recognition. So, it is unnecessary and impossible to unify associations representing various branches of the logistics industry in China. The government can guide these associations into unification gradually in line with the development of the logistics industry and market demand.

Finally, in combination with these changes and policy reforms, we should adopt the approach that Japan used successfully. The authorities should issue a document of principles to lay out the direction for the future development of major policies meant to guide and promote the development of the logistics industry in China.