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Bing-lian Liu
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# Contemporary Logistics in China

## Transformation and Revitalization


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# Preface

This report is a sequel to the first volume of the series entitled "*Contemporary Logistics in China: An Introduction*," with the intention of extending the coverage of this broad subject and providing further information to the interested readers. With the steady and rapid development of China's economy in the past decade, its logistics industry, in reflecting the market demand and being shaped by various physical and ideological influences, has gradually grown into a vibrant economic force. Its elevated interaction with the global trade partners as a prominent manufacturer and a gigantic consumption market has drawn wide attention from the world's logistics professionals. There arose an intense interest in a comprehensive exposition of China's logistics development in English. Yet for years there had been only scattered publications or research reports on the subject, mainly in Chinese language. The annual "Report of Logistics Development in China," (called by the academicians, researchers, enterprises and governmental agencies in China as the "Blue Book"), published by the Logistics Research Center at Nankai University over the past decade, is a case in point. Realizing the broader interest of the English-reading community, the Center published its first English report entitled "*Contemporary Logistics in China: An Introduction*" in October 2011. The report was a first such document founded on the extensive study by a team of seasoned researchers at the Center, and was well-received by the global readers. It was organized to consist of five main sections: the development environment of China's logistics, the supply and demand characteristic of the logistics market, the status of logistics infrastructure, emerging regional logistics, and logistics for some special segments. This coverage is adopted to afford the academic as well as practitioner readers a concise yet panorama view of the logistics development in present-day China, and an in-depth understanding of the logistics development trends of certain regions and hot issues.

This present report, as a second volume of the series, consists of seven chapters. It follows the same general conceptual organization, yet with updated analysis and discussion of logistics development, under the backdrop of the aftermath of the international financial crisis, the acceleration of the transformation of development mode and the strategic adjustment of the economic structure. The first three chapters of this report give an up-to-date summary of China's economic development trend,

its status of logistics market development and the condition on logistics infrastructure development. The fourth chapter presents the status, the potential and special significance in logistics development of several booming economic regions: the Chengdu-Chongqing region, the Xinjiang Uygur Autonomous Region, the Northeastern region and the Zhongyuan city cluster. The rapid development of these regions has in various ways fortified the overall logistics capability of the nation.

The fifth chapter studies the current status, existing problems and future development trend of several emerging logistics segments: the fresh agricultural products logistics, the coal logistics and the express logistics. These segments have evolved swiftly in the past few years and their logistics have impacted the daily lives of all residents. Logistics needs, and enhancement of infrastructures, systems, regulations and information platforms, are explored in this chapter. The next chapter deals with the study of several hot spot logistics issues such as multimodal transport, bonded logistics and green logistics. These topics, though diversified, focus the attention on subjects that concern the logistics development in China, both for improving efficiency, consistency and for complying with the environmental responsibility. The final chapter gives a summary of the aforementioned subjects and a perspective view of the future development.

This volume, together with its predecessor report, aims to provide a comprehensive, balanced report and analysis of modern-day logistics development in China. It is based on the most up-to-date information and synthesized for a systematic presentation for readers in universities, consulting firms, media, logistics enterprises, governmental agencies, and research institutions. The appended cumulative statistics tables can also serve as a credible data source and reference manual for researchers who wish to engage in further study of the logistics development in China. Happy reading!

# Contents

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# Chapter 1
# Development Environment of China's Logistics

**Ling Wang**

The economic situation of China was relatively complex in 2010. China speeded up the transformation of its mode of economic development and propelled the strategic adjustment of its economic structure, thus enabled the national economy to develop in a stable and rapid manner. Meanwhile, governments at all levels actively implemented the *Adjustment and Revitalization Plan for Logistics Industry* issued in 2009, successively launched a series of policy documents for promoting industrial transfer/ reconstruction and rural logistics system construction, thus created a favorable macro environment for the healthy development of China's logistics.

This chapter describes the macro environment for the development of China's logistics in 2010 from two perspectives, viz. economic environment and policy environment, to provide a backdrop for the discussions in subsequent chapters. The first section states the economic environment of China logistics from five aspects, viz. national economy, international trade, domestic demand, infrastructure and enterprise cost. The second section states the policy environment of China's logistics from six aspects, viz. planning and local regulations, policies launched by various departments and ministries, construction of rural and agricultural products circulation system, policies on undertaking industrial transfer, policies on enterprise acquisition and reconstruction, and the *Economic Cooperation Framework Agreement* (ECFA).

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## 1.1 Economic Environment for the Development of China's Logistics

In 2010, China speeded up the transformation of its economic development mode, and carried out an industrial structure optimization and upgrade. Economic growth previously stimulated by investment and export was infused by enormous domestic consumption. This change effectively reinforced and expanded beyond the achievement of coping with the international financial crisis and laid a foundation for a rapid growth of total logistics amount.

### *1.1.1 Stable and Rapid Development of National Economy*

In 2010, China's economy extended the strong recovery trend of the latter half of 2009. Gross domestic product for the year ranked the second in the world with an amount of 39.8 trillion RMB.[1] Calculated at a comparable price level, the year on year growth rate was 10.3%, with an increase of 1.1 percentage points over last year, as shown in Fig. 1.1.

In 2009, China's economy exhibited a conspicuous investment-pull feature; the contribution proportion to economic growth for investment, consumption and net export was respectively 95.2, 45.4 and −40.6%. In 2010, the contribution proportion

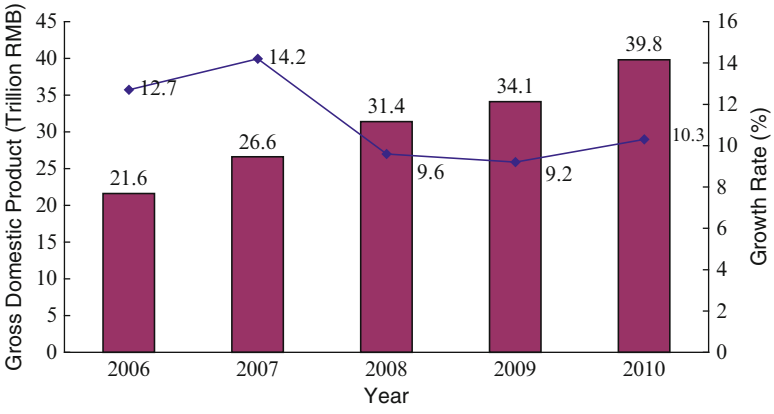


**Fig. 1.1** Gross domestic product and growth rate for 2006–2010 (*Source*: Compiled from the *China Statistical Yearbook* (2010) and the *China Statistical Bulletin of National Economic and Social Development* (2010) *Note*: Unless otherwise specified, all sources cited in this volume are published in Chinese with referencing information translated into English)

[1] If unspecified, all statistics and conclusions in this report refer to Mainland China, and do not include Hong Kong, Macao and Taiwan.

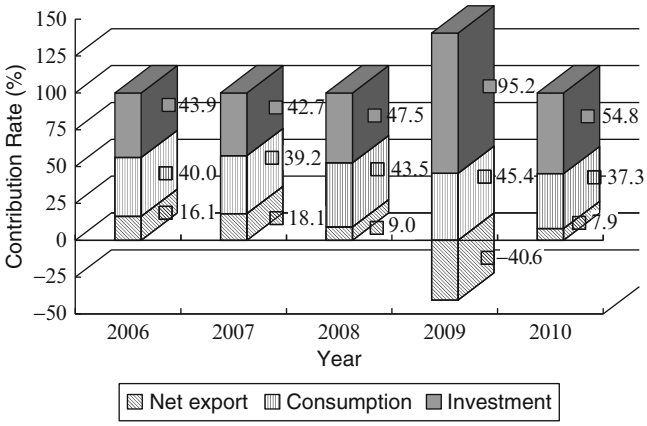


**Fig. 1.2** Percentages of contribution of the three demands to GDP growth for 2006–2010 (*Source*: Compiled from *China Statistical Yearbook* (2010) and the speech of Ma Jiantang (Director of National Bureau of Statistics) at the News Conference of National Economic Operation in 2010, Beijing, January 20, 2011)

of investment, consumption and net export to economic growth was respectively 54.8, 37.3 and 7.9%, which correspondingly stimulated the GDP growth by 5.6, 3.9 and 0.8 percentage points. It can be seen that, in 2010, the structural driver for China's economic growth was improved markedly, demonstrating an economic growth pattern that is jointly stimulated by investment, consumption and export. The contribution proportions of the three categories of demands to GDP growth for 2006–2010 are shown in Fig. 1.2.

In 2010, logistics operation returned to a fast development path from the tremulous state of prior years. Total value of social logistics[2] reached 125.4 trillion RMB, with a growth of 15% year on year, and an increase of 3.7 percentage points over that of 2009. Added value of the logistics industry was 2.7 trillion RMB; the price-adjusted year-on-year growth is 13.1%, an upswing of 2.5 percentage points over last year.[3]

### *1.1.2 Reviving Growth of International Trade*

With the resurgence of world economy, especially the strong economic growth in emerging markets and developing countries, foreign trade of China in 2010 grew in

[2] The total value of products using logistics services equals the total value of products initially entering the logistics field and delivered to or already received by the end-users during a period of time, representing the value of the logistics demand during a certain time.

[3] National Development and Reform Commission of P. R. C., National Bureau of Statistics of China, and China Federation of Logistics and Purchasing. National Logistics Report of 2010 [R], Beijing, 2-28-2011.

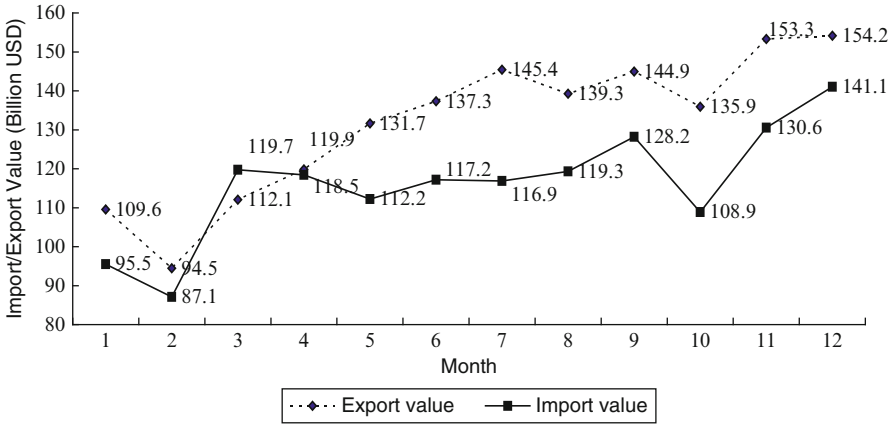


**Fig. 1.3** Monthly import and export values of China's foreign trade in 2010 (*Source*: Compiled from data published by the General Administration of Customs of the People's Republic of China)

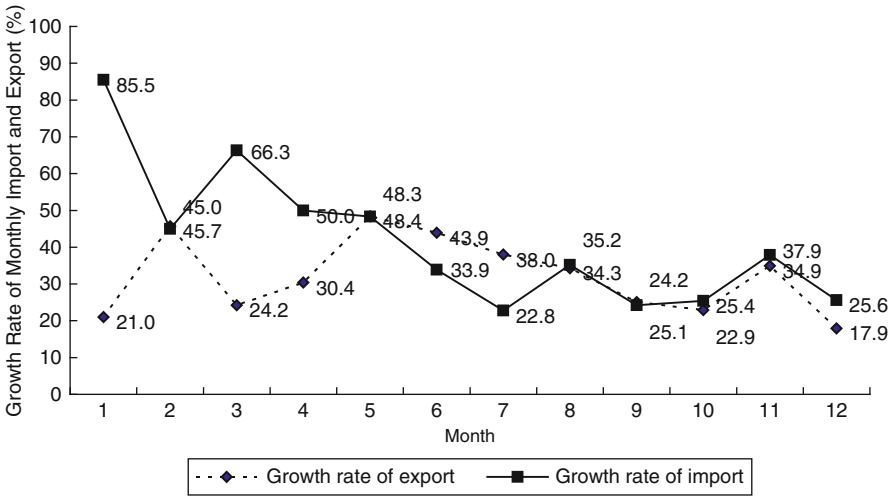


**Fig. 1.4** Growth rate of monthly import and export values in 2010 (*Source*: Compiled from data published by the General Administration of Customs of the People's Republic of China)

a rapid and restorative manner. In the first half of 2010, the total import and export value of foreign trade rebounded swiftly and realized a speedy growth, while in the second half, the growth slowed down. Overall, the year reaped a relatively high level of growth. Monthly import and export values and growth rates of China's foreign trade in 2010 are shown in Figs. 1.3 and 1.4 respectively.

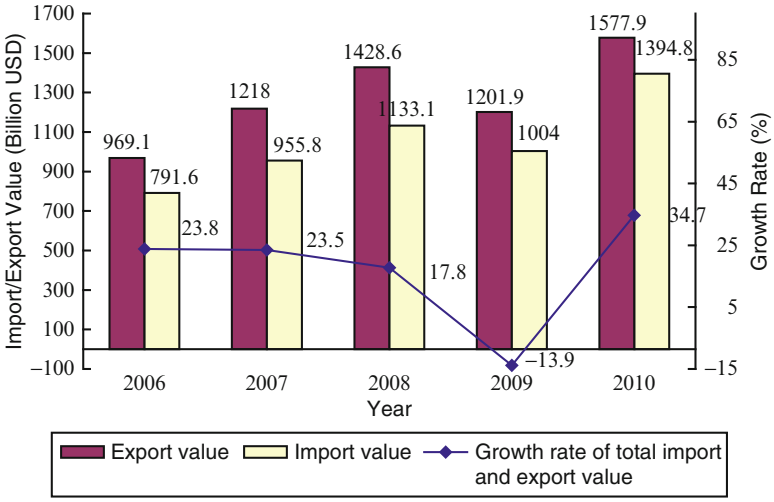


**Fig. 1.5** Total import and export values and growth rates for 2006–2010 (*Source*: Compiled from the *China Statistical Bulletin of National Economic and Social Development* (2006–2010), published by the National Bureau of Statistics of China)

The annual total amount of import and export goods for 2010 was 2.97 trillion USD, with a growth rate of 34.7%. Wherein, the value of export was 1.58 trillion USD with an increase of 31.3%; and that of import was 1.39 trillion USD, with an increase of 38.7%. Total import and export values and growth rates for 2006–2010 are shown in Fig. 1.5.

In 2010, the international logistics market of China realized a restorative growth. Ports above the designated scale[4] achieved a cargo throughput of 8.02 billion tons, with a year-on-year increase of 15.0%. Wherein, the foreign trade throughput was 2.46 billion tons, with an increase of 13.6%; the container throughput at port was 145 million TEUs, with an increase of 18.8%.[5] The cargo and post throughput at airports was 11.29 million tons, which increased by 19.4%. Wherein, throughput of domestic airlines was 7.22 million tons, with a year-on-year increase of 15.5% (that of airlines from the Mainland to Hong Kong, Macao and Taiwan was 691,000 tons and increased by 53.6%); throughput of international airlines was 4.07 million tons, with an increase of 27%.[6]

[4] Ports above the designated size are those sea ports with annual cargo throughput over one million tons and inland ports with annual cargo throughput over two million tons and ports for international trade, for container load and unload, as specified by the Chinese Ministry of Transport.

[5] China Statistical Bulletin of National Economic and Social Development (2010), National Bureau of Statistics of China. http://www.stats.gov.cn/tjgb/ndtjgb/qgndtjgb/t20110228_402705692.htm,2011-02-28

[6] Statistical Bulletin of Nationwide Airports (2010), Civil Aviation Administration of China. http://www.caac.gov.cn/i1/K3/201103/t20110315_38273.html,2011-03-15

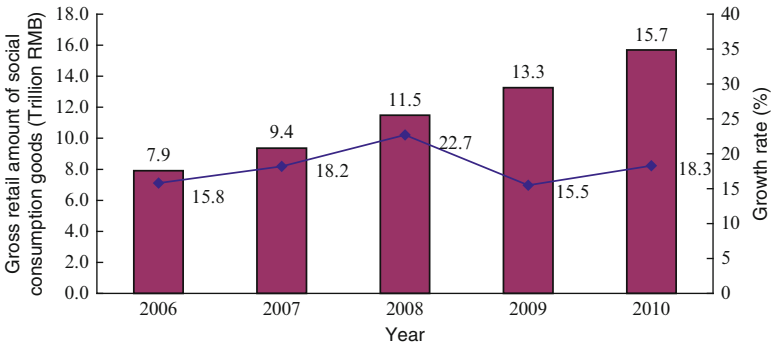


**Fig. 1.6** Gross retail amount and growth rate of social consumption goods for 2006–2010 (*Source*: Compiled from the *China Statistical Bulletin of National Economic and Social Development* (2006–2010), published by the National Bureau of Statistics of China)

### *1.1.3 Continual Growth of Domestic Logistics Demand*

In 2010, volume for consumption goods in China grew in a continual and rapid manner; consumption hot spots still concentrated in the three categories related to the Economic Stimulus policy, viz. automobiles, household appliances and building materials. The annual gross retail amount of social consumption goods was 15.7 trillion RMB, with an increase of 18.3%. Wherein, compared with last year, the increases in retail spending are as follows: automobiles (34.8%), clothing (25.8%), Chinese herbal and western medicines (23.5%), household appliances and audio-visual equipment (27.7%), furniture (37.2%), building and decoration materials (32.3%). Gross retail amount and growth rate of social consumption goods for 2006–2010 are shown in Fig. 1.6.

Increase in domestic social consumption demand extended the prosperous trend of domestic logistics demand market in 2010. The national total logistics value of industrial products was 113.1 trillion RMB, which accounted for 90.2% of the total value of social logistics. This represents a growth of 14.6% over that of the previous year, a rate which is 0.5 percentage points higher than that of last year. The total logistics values of agricultural products, renewable resources and institutional and residential products were increased by 4.3, 39.5 and 14.7% year on year,[7] respectively.

### *1.1.4 Significant Achievement in Logistics Infrastructure Construction*

In 2010, the investment on social fixed assets continued to increase, but at a slower pace of growth compared with that of the large-scale investment-driven economy in

[7] China Logistics Information Centre. http://www.clic.org.cn/portal/wltj/wlfx/1295244884282286.htm

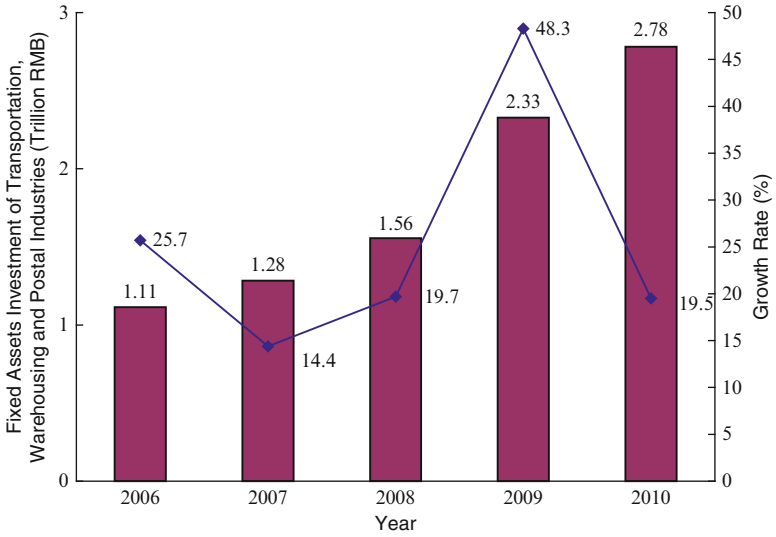


**Fig. 1.7** Fixed assets investment and growth rate of transportation, warehousing and postal industries of China for 2006–2010 (*Source*: Compiled from the *China Statistical Bulletin of National Economic and Social Development* (2006–2010), published by the National Bureau of Statistics of China)

2009. The total social fixed assets investment of 2010 was 27.81 trillion RMB, which is an increase of 23.8%, but a drop by 6.3 percentage points compared with that of last year. Wherein, the investment in the transportation, warehousing and postal industries was 2.78 trillion RMB, which is an increase of 19.5%, but a decline by 28.8 percentage points compared with that of last year.[8] This suggests that the growth of fixed assets investment in logistics industry has returned to its normal pace after the hike of the large-scale transportation infrastructure investment of 2009. The fixed assets investment and growth rate of the transportation, warehousing and postal industries during 2006–2010 are shown in Fig. 1.7.

Generally speaking, China's comprehensive transportation system has been established through continual development in the past decade. By the end of 2010, the length of national railways in operation was 91,000 km; wherein, the length of high-speed lines in service was 8,360 km, ranking highest in the world. The construction of 12 national trunk highways (in five vertical directions and seven horizontal directions) and eight provincial passages in the Western region had been completed. There were 1,774 deepwater berths within the coastal harbors, having a total throughput capacity of 5.5 billion tons; five specialized transportation systems involving coal, oil, ore, container and grain were established. The navigable mileage of national inland rivers was 124,000 km; wherein, the length of navigation channels above

[8] China Statistical Bulletin of National Economic and Social Development (2010), National Bureau of Statistics of China.

**Table 1.1** Capacity, transport turnover quantity and growth rate of various cargo transport modes of 2010

| Ind | Unit | Volume | Growth rate of 2010 (percentage point) | Growth rate of 2009 (percentage point) | Change in growth rate (percentage point) |
|---|---|---|---|---|---|
| Total cargo transport capacity | Billion tons | 32.0 | 13.4 | 7.5 | 5.9 |
| Wherein: railway | Billion tons | 3.6 | 9.3 | 1.9 | 7.4 |
| Highway | Billion tons | 24.3 | 14.0 | 9.4 | 4.6 |
| Water transportation | Billion tons | 3.6 | 14.0 | 3.0 | 11.0 |
| Civil aviation | Million tons | 5.6 | 25.1 | 9.3 | 15.8 |
| Pipeline | Billion tons | 0.5 | 10.3 | 1.3 | 9.0 |
| Cargo transport turnover quantity | Billion ton-km | 13732.9 | 12.4 | 9.8 | 2.6 |
| Wherein, railway | Billion ton-km | 2764.4 | 9.5 | 0.5 | 9.0 |
| Highway | Billion ton-km | 4300.5 | 15.6 | 10.7 | 4.9 |
| Water transportation | Billion ton-km | 6430.5 | 11.7 | 14.0 | –2.3 |
| Civil aviation | Billion ton-km | 17.7 | 39.9 | 5.6 | 34.3 |
| Pipeline | Billion ton-km | 219.8 | 8.7 | 4.1 | 4.6 |

Source: Compiled from the *China Statistical Bulletin of National Economic and Social Development* (2009–2010), published by the National Bureau of Statistics of China

grade III was 9,085 km, constituting a high-grade navigation channel network.[9] There were 175 certified airports, covering 91% of the national economic aggregate, 76% of population and 70% of county-level administrative units.[10] Thus an airport system featuring appropriate scale and sufficient function had been established.

With the integration of key logistics nodes and trunk channels, the network advantage of logistics infrastructure is becoming evident. Especially, the rapid development of high-speed rail has released massive cargo transport capacity and played an important role in relieving the railway transport pressure. In 2010, the cargo transport capacity and cargo transport turnover quantity of various transport modes were greatly improved, as shown in Table 1.1.

### *1.1.5 Growing Cost Pressure on Logistics Enterprises*

In 2010, the price of commodities in China rose steeply due to factors such as excessive issuance of currency, mounting labor cost, and speculation of hot money. Residents'

[9] Li shenglin. Speeding up transform of transport development mode and creating new situation of scientific transportation development during "the 12th five-year plan" period. http://www.moc.gov.cn/zhuzhan/zhengwugonggao/jiaotongbu/qita/201012/t20101229_891770.html,2010-12-30

[10] Frequent completion achievements of civil aviation during "the 12th five-year plan" period. http://caac.people.com.cn/GB/114144/13733878.html. 2011-01-14.

consumption price grew increasingly quarter by quarter; the annual average price rose by 3.3% over that of previous year. Wherein, price increases for various items are as follows: food price (7.2%), fixed assets investment price (3.6%), factory price of industrial products (5.5%), purchase price of raw materials, fuel and power (9.6%), and production price of agricultural products (10.9%).

In 2010, the price of various production factors of logistics enterprises rose steadily, and caused the enterprises to enter the stage of "high-cost" operation. First, rising wage level led to the rise of labor cost for logistics enterprises. Data from the National Bureau of Statistics show that the per-capita disposable income of urban residents in the nation was 19,100 RMB, which increased by 11.3% compared to that of last year; wherein, per-capita wage income was 13,700 RMB, with an increase of 10.7%.[11] Second, continuous climb in fuel price directly caused sizable increase in transportation and production cost. In 2010, the price of domestic refined petroleum products was adjusted upward four times; the price of gasoline and diesel fuel per ton were increased by 1,090 RMB and 1,060 RMB, respectively. Therefore, the cost pressure of logistics enterprises was substantially heightened. For transport enterprises operating under long-term contracts, it was especially difficult to ameliorate the rising cost pressure by varying the freight rates. Third, resource limitation and environmental constraints added to more cost burden. The logistics industry is the apparent key field for energy saving and emission reduction. However, certain costs are necessary for the reformation of the logistics facilities, equipment and technologies, which in turn elevate the enterprise's operating cost.

According to the *Statistical Research Report on Logistics among Nationwide Key Enterprises* issued by the Economic Operations Adjustment Bureau of National Development and Reform Commission, the Trade and External Economic Division of the National Bureau of Statistics, as well as the China Federation of Logistics and Purchasing, in the first three quarters of 2010, the main operations cost of logistics enterprises was increased by 42.7% year on year, and the compensation for labor was increased by 16.6%. Consequently, most logistics enterprises operated under conditions of high cost, low price and minute profit. The previous operations and expansion mode with low wage and low cost has passed, and it is now urgent for the logistics enterprises to reform their operational concepts and modes.

## 1.2 Policy Environment for the Development of China's Logistics

The issuance of the *Adjustment and Revitalization Plan for Logistics Industry* greatly elevated the status of the logistics industry in the national economy. In 2010, relevant departments and local governments at all levels had formulated special

[11] National Bureau of Statistics of China. In 2010, income of urban residents increased continuously and income of low and middle income groups grew rapidly. http://www.stats.gov.cn/was40/gjtjj_detail.jsp?searchword=%B9%A4%D7%CA&channelid=6697&record=22,2011-04-28

programs and local implementation stipulations, to provide policy assurance for the development of the logistics industry. Meanwhile, China has successively put forward documents promoting industrial transfer and reconstruction, which played a pivoting role in logistics development.

### *1.2.1 Special Plans and Local Regulations*

2010 was a critical year for the substantiation of the *Adjustment and Revitalization Plan for Logistics Industry*, during which more than half of the provinces in China issued the *Implementation Details on Program for Adjustment and Revitalization Plan for Logistics Industry*. Most of the provinces and cities established modern coordination mechanisms for logistics tasks, and some even founded permanent organizations for carrying out major logistics tasks. Many provinces and cities also formulated corresponding special programs and ordinances.

According to the requirement of the *Adjustment and Revitalization Plan for Logistics Industry*, relevant departments of the Government sped up the formulation or issuance of a series of special programs to lead and promote logistics development in key fields and regions. These special programs cover seven fields, i.e. coal, grain, cold chain for agricultural products, logistics parks, emergency logistics, commercial logistics and logistics standards. The National Development and Reform Commission (NDRC) issued the *Logistics Development Program of Cold Chain for Agricultural Products* in July, 2010, and the Standardization Administration of China (SAC) issued the *Special Program of National Logistics Standards* in August, 2010. The Ministry of Commerce disseminated the *Special Program of Commercial Logistics Development* in March, 2011. In addition, special programs for coal, grain, logistics parks and emergency logistics are also being formulated.

The *Development Regulations on Promoting Modern Logistics of Fujian Province,* as the first local regulation fostering the development of logistics industry in China, was issued and implemented on January 1, 2011. As China's first local legislation aiming at the logistics industry, it is expected to provide the experience and set an example for formulating the national macro logistics laws in the future.

The *Development plan for Express Service in Beijing-Tianjin-Hebei Region* (2010–2014) was issued in October, 2010, which was the third regional special program in China for the development of express delivery, following the *Development Program of Express Service at Yangtse River Delta Area* (*2009–2013*) and the *Development Program of Express Service in Zhujiang Delta Area* (*2010–2014*). The program bears great significance in breaking through the restriction existing among various administrative divisions, and effectively leading the rational allocation of resources and the optimal network layout of express services.