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The analysis of regional logistics capacity and enterprise performance-Bengbu and BBCA Group analysis

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THE EMPIRICAL ANALYSIS OF REGIONAL LOGISTICS CAPACITY AND ENTERPRISE PERFORMANCE

----Bengbu and BBCA Group analysis

By

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DECLARATION

I certify that all the material in this research paper that is not my own work has been identified, and that no material is included for which a degree has previously been conferred on me

The contents of this research paper reflect my own personal views, and are not necessarily endorsed by the University.

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ABSTRACT

Title of Dissertation: **The Empirical Analysis of Regional Logistics Capacity and Enterprise Performance**

-------Bengbu and BBCA Group Analysis

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Logistics is the mainstay industries for economic growth. A high quality regional logistics may stimulate the local economy. Based on regional logistics theory and empirical analysis, this article used a combination of qualitative analysis and quantitative analysis method, on the basis of the evaluation results and forecasts analysis. From Bengbu logistics current situation and developing advantages and disadvantages, the research selected freight transport turnover as the index of Logistics capacity, and profit as the enterprise performance index, applied the EG two steps to analyze cointegration between the logistics capacity and the enterprise performance, which showed that there was a clear association between them. The paper forecasted the next 10 years' Bengbu regional logistics capacities with the GM model. Considering regional logistics advanced experience and the actual needs of local enterprises, the paper made some suggests promoting Bengbu regional logistics capacity. The suggestions

KEYWORDS: Logistics capacity, Region & Enterprise development, Bengbu, BBCA, Cointergation

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LIST OF ABBREVIATIONS

EG	Engle and Granger
GM	Gray Forecasting Model
ADF	Augmented Dickey-Fuller
BBCA	Anhui BBCA Group
RFID	Radio Frequency Identification
EDI	Electric Data Interchange
GPS	Global Positioning System
POS	Point of Sale
AGO	Accumulated Generating Operation

Chapter 1 Introduction

1.1 Thesis background

Modern logistics is made by China's rapid development in recent years as an emerging industry, is the mainstay industries for economic growth. Regional Logistics Center as key node in the logistics system, in a modern logistics system occupies a significant position. Modern logistics center is no longer just a simple exchange of goods, transit and transport places. The best point of factors of production rather than as a collection of people, logistics and information flow, to attract industries' layouts in the surrounding, promoting regional economic development and regional industrial and commercial center and an important link in the global logistics network.

The study of regional logistics capacity is still in the exploratory stage. For regional logistics capacity and performance of the regional logistics enterprises are rarely mentioned. Domestic and foreign scholars have some explorations on the definition of the current regional logistics capabilities, logistics and the dialectical relationship between economic development and other issues.

China's modern logistics development is undergoing a change from the traditional

mode of operation to a modern decentralized supply chain integration mode of operation from the scope of local administrative system to a market-oriented system as a whole national unity in an important period of transition. Bengbu is the center city in northern Anhui, and is the old industrial city, playing the regional transport hub role in central area, which need to adapt to rapid growth in the socio-economic development of the modern logistics needs. Through optimizing the structure of the logistics resources, Bengbu should enhance the logistics capacity to achieve its long-term economic restructuring and switch the optimization of the industrial structure. Regional Logistics should be met the needs of modern logistics rapid growth and objective requirements of accelerating the transform of traditional logistics industry. Promoting regional industries through the integrate supply chain to support the development of the core business. So the regional development of modern logistics in Bengbu the background and current situation of the development of modern logistics in Bengbu advantage and disadvantage analysis .It is very necessary to develop Bengbu regional logistics capacity

1.2 Research situation of regional logistics capacity

The theoretical research and practice about regional logistics has been initiated in China. Owing to the weakness of the theoretical research, there are many misunderstandings on the regional logistics development. Logistics capacitis researches are in starting stage in China. The mainly of them are focus on micro-logistics study. For the macro aspects of the regional logistics study are a number of empirical analyses. There is little research about how to strengthen regional logistics capabilities

Foreign study on logistics capacity is apt to core competence research. The current

comprehending of logistics capacities is the extrapolating concept of logistics coming from core competence.

1.3 Main content and methods

Based on regional logistics theory and empirical analysis, this article used a combination of qualitative analysis and quantitative analysis method, the basis of the evaluation results and forecasts analysis. From Bengbu logistics current situation and developing advantages and disadvantages and considering regional logistics advanced experience and the actual needs of local enterprises, the paper made some suggests promoting Bengbu regional logistics.

There are four parts in the paper: part 1 includes the chapter 1 and chapter 2, which established a theoretical framework.

The second part (chapter 3 and 4) conducts the logistics capacity research macroscopic from the angle. ① supporting elements of Bengbu logistics capacity, such as road, rail and inland waterway routes have been studied as emphasized. ② selecting freight transport turnover as the index of Logistics capacity, and profit as the enterprise performance index. Applied the EG two steps to have cointegration analysis between the Logistics capacity and the enterprise performance. The results showed that there was a clear association between them, and this conclusion has certain reference value for corresponding planning. ③studying the logistics capacity from the level of enterprise characteristic, operation and performance. At the end of chapter used the BBCA Group Case to identify the association between Logistics capacity and the enterprise performance

The third part (chapter 5 and 6) analysis of Bengbu logistics capacity in the future, and gave the suggestions to improve Bengbu regional logistic capacity and the dissertation conclusions with the further research direction.

The last part (chapter 7) gives the conclusion of the dissertation and makes the expectation.

Empirical research is the focus of this paper. The technical path is following the Quantitative Study to the qualitative research. First, using gray system model forecasts Bengbu logistics in the next 10 years for the development of a quantitative prediction and makes a brief analysis with 1997-2006 logistics data of Bengbu. Secondly, the paper analyses the BBCA Group logistics conditions using the acquisition the import and export of relevant data from 1997 to 2006. Secondly, the paper analyses the BBCA Group logistics conditions using the acquisition the import and export of relevant data from 1997 to 2006. Paper utilized cointegration analysis to establish the disequilibrium econometric model, inspected variables whether or not compliance the connection and long term equilibrium relationship. In dealing with the actual needs and local reality, article puts forward the feasibility dispose

The research selected freight transport turnover as the index of Logistics capacity, and production, profit and employment volume as the enterprise performance index. Applied the EG two steps to have cointegration analysis between the Logistics capacity and the enterprise performance. The results showed that there was a clear association between them, and this conclusion has certain reference value for corresponding planning.

Chapter 2 The conception of regional logistics capacity and its research

2.1 The theory and the research of logistics capacity

2.1.1 Logistics capacity

In this paper, the logistics capacities are thought like a specific logistics system, the implementation of the logistics tasks corresponding available capacity. if the regional logistics capacity was inadequate, causing cargo backlog, affected the local economic development and normal operation. If the logistics beyond the logistics capabilities and distribution plan, the enterprises could not satisfy the customers' requirement delivering on time.

Yu-Lee, Reginald Tomas [1] believed the ability of enterprises, through many manifestations, including, labor, equipment, technology and raw materials. Capacity management consists of all the factors of production what organization owned .Management reflects that the organization gets the outputs from its capacity.

[1] Yu-Lee, Reginald Tomas(2002). Essentials of Capacity Management. John Wiley & Sons.

Donald Bowersox and David J.Closs[2] think the logistics capability is ability assessment of manufacturers which provide the competitive customer services in the possible lowest total cost.

The authors think that the logistics capacity is an enterprises' capability to achieve logistics objectives. The mainly manifested of logistics capacity is in each element, such as storage, transport, handling, and import and export etc. Logistics capability is the whole process of the total capacity. Logistics capabilities should provide the competitive power under cost constraint as much as possible.

2.1.2 Review on regional logistics capacity study

Since Prahalad,C.K and Gary Harmel[3] published epoch-making 'The core competency of the corporation' at Haverard Business Review in 1990. That formally established the core competency significance in management theory and practice . The article's main points 'core competence is an ongoing source of competitive advantage' is widely accepted and broadcasted.

Studies on the logistics capacity abroad are majority concerned the core competencies of logistics enterprises, the byproducts of Competitive Advantages study. For example, Stalk Evans, Shulman[4] insisted that the future of competition will be based on capacity. They maintained that "the 20th century since the 1990s, competition will be carried out based on the company's ability

[2] Donald J. Baoersuokesi, David. J Claus(1997). Logistics Management--Integration of Supply Chain Process. McGraw-Hill.
[3] Prahalad,C.K and Gary Harmel(1990.May-June), The core competency of the corporation. *Haverard Business Review*..79-90
[4] Stalk George, Philip Evans and Lawrence E Shulman Competing on Capabilities:

Logistics capabilities of the current study can be interpreted as extended extrapolation of core competence or enterprises competitiveness in logistics field. From the overall perspective to research logistics capabilities, referring to the social reproduction of the overall logistics capacity, can be called macro logistics capacity, which also include regional logistics capability of regional social reproduction process, such as urban logistics capacity. Micro logistics capacity indicated the logistics capacity of micro-economic entities. Such as enterprise logistics capacity, supply chain logistics capacity.

Logistics capacity study is is in starting stage in China, Chinese scholars mainly focus on micro-logistics study. For the macro aspects of the regional logistics capacity are some empirical studies. How to strengthen regional logistics capacity is nearly still a blank.

2.2 The situation of regional logistics capacity development in China

2.2.1 The situation of regional logistics capacity development in China

At present, China's regional logistics have a lot of characters, such as small scale, separate management, the low level of organization and integration, logistics infrastructure distribution unreasonable, logistics technology lagged. The main problems are：

1) China's logistics enterprises have smaller scale and weakly logistics capacities.

2) China's regional economic development imbalance. Logistics infrastructures are quite a difference in different areas. Inter-regional transport systems are underdevelopment.

3) China needs a unified information platform. The whole logistics industry lacks information exchange

4) China's Regional Logistics Development exist regional administrative division. A unified social and international logistics platform is not come into being.

So exploring the regional logistics related issues and promoting regional logistics rationalization is particularly important in a practical sense.

2.2.2 Current problems and bottle neck of regional logistics study

Since logistics theoretical researches are relatively weak. Some problems about regional logistics practice do not have reasonable explanation. The result leads to some misunderstanding

1) Unrealistic pursuit of the modern logistics equipments, the results lead to logistics cost rising and resources wasting. The logistics efficiency of enterprises and whole society has become lower.

2) Some people look at the logistics too simple. They believe they can operate logistics after owning logistics facilities and equipments with the logistics demand

3) Many people have the high expectations about logistics, which the logistics industry can have a high rate of return. They invest new logistics companies blindly that are contrary to purpose of logistics which based on resources integration.

4) The researchers and operators of regional logistics ponder the regional logistics development strategies and planning issues with regardless the actual situation.

2.2.3 Problems needed to be solved to regional logistics capacity

There are two aspects of Regional logistics capacity: the demand volume of regional logistics capacity and the regional logistics services supply capacity. The size and structure of Logistics demands decide the regional logistics services capacity's scale and structure. The level of regional logistics demands reflected the regional economic development scale. Therefore, this dissertation focus on synergies of regional logistics services supply capacity and regional economic.

Regional logistics is an important component part of regional economy. Regional logistics development will provide good distribution channels to promote regional economic development. Regional economic development would help regional logistics to concentrate the goods and enlarge the logistics capacity scale and promote regional logistics development.

However, we must realize that regional logistics capacity should coordinate with regional economic development. If the balance had broken, inhibitory effect acts the other. For regional logistics capacity building, we not only invest the logistics infrastructure and equipments, but also should create the good environment for logistics to improve logistics capacity, which will stimulate regional economic development. Logistics is a derived demand. Regional economic development would stimulate the growth of demand for logistics.

Therefore, the correct making the regional logistics capacity planning, particularly

considering uncertainty of the future logistics demand, that has significance sense to meet the regional logistics demands and promote regional economic sustainable and harmonious development.

Under developmental law of the industry structure, regional industrial development direction is to rationalize and integration. And the regional logistics development is fostered logistics enterprises to elaborate regional integration advantage and economic scale, which promote regional logistics industry moving to professional and rationalization. How to build the regional logistics channel adapt to economy development, optimize regional industrial structure and expanding regional logistics for promoting the local economy, above all problems we need to consider.

2.3 Main conclusions of this chapter

This chapter discusses the concept of logistics capacity and regional logistics capacity research. Now day China's logistics capacity study is still rare. Only a small amount of literature from the view of enterprises and supply chain management explores the issue. This chapter from the regional level gives the logistics capability for a preliminary study and qualitative analysis the regional logistics capacity planning and regional economic development that is in the dialectical relationship. So these studies are valuable to promote regional logistics capacity planning.

Chapter 3 Research of regional logistics capacity in Bengbu

3.1 Comments about the development of society and economy in Bengbu

3.1.1 The situation of economy development and existing problems

Bengbu is the northern center city in Anhui Province, located in the middle region of the Huai River, and always be an important industrial city and regional business center in Northern of Anhui. There are six cities in this area with 31 million people. Bengbu has certain advantages in light industry, electronics industry, chemical industry, textile industry, food processing industry and some other fields. Meanwhile Bengbu is the regional railway and highway and waterway transport hub city of eastern China in the very long period. Especially as the important nodes of Beijing-Shanghai railway, Bengbu used to be the city of State Reserved Materials Warehouse and transshipment center, playing an important role in circulation of materials of the regional and even nationwide.

Since the reform and opening up, although Bengbu has made remarkable growth in Economic and Society. But during the process of the economy transformation, the city's overall economic growth in the quality of restrictions cause to the transformation of traditional industries by technology, capital, talent and the social security system constraints. In another side, the market mechanism replaced the

planning mechanism; the traditional goods transport modalities gradually weakening. The function of Bengbu as a regional distribution center had obviously weakened. Traditional transportation and warehousing logistics infrastructure and other resources utilizing efficiency greatly reduced.

3.1.2 Development Planning and industry orientation in Bengbu

In the next 10 to 15 years，Bengbu City and Anhui Province are confronted with new favorable circumstances of rapid development and new challenges

1) Integration of the world economy and China rapid economic has provided a steady macroeconomic environment. The overall economic faces a better climate for development after joining W T O.

2) Bengbu located in transitional zone from China's eastern areas and the central and western regions. It has obvious advantage in the manufacturing gradient transfer from coastal area to inland area. We can rely on Bengbu transport convenient condition, abundant labor resources and good industrial foundation to attract the capital and technology from eastern. Bengbu is enhanced the economic and technical cooperation with the western region and spread its developing space in the same time,

3) As a considerable foundation of the old industrial city, Bengbu's urbanization development, industrial and technology upgrading have the larger room and greater potential for development. According to Bengbu City National Economic and Social Development "11th Five" Plan. Bengbu’s industrial development direction and major tasks are: to strengthen industrial dominant position; accelerate the process of

industrialization; support advantages industries including the fine chemical industry, glass and deep processing, specialized machinery and parts processing; upgrade the traditional industries; actively cultivate electronic information product manufacturing, bio-pharmaceuticals, new materials and environmental protection industrial and other high-tech industries. Pay special attention to the development of the construction industry and speed up enterprise restructuring. The adjustment of the industrial structure and product updates need to adapt to fluctuation market demands. The plan needs a strong modern logistics system to support. Transforming and elevating the city's commerce and logistics is very necessary.

3.2 Analysis of development environment of regional logistics in Bengbu

3.2.1 Geographical condition and the function of region synthesis transport system in Bengbu

Bengbu is the trade, circulation and traffic center in the southeastern of north -Anhui district. As the communications spot between East China Area and the economical developed Yangtze River Delta Area. Bengbu is an important transportation hinge to link the north and the south China. Bengbu has developed a multielement and tridimensional communications network that creates favorable conditions for economic and social development.

The Bengbu logistics volume as Table 1 from 2002 to 2006:

Table 1 Bengbu freight volume from 2002 to 2006

Year	2002	2003	2004	2005	2006
freight volume	19.41	20.92	21.86	23.58	24.83

Source: Bengbu Statistic Bureau 2006 unit: million tons

High standard roads condition makes urban traffic unimpeded. National Backbone Networks of the Beijing-Fuzhou and Shanghai to Xi'an Expressway interchange in Bengbu. Bengbu is closely linked with Shanghai. The city becomes the important transportation hub in East China and the traffic center of northern Anhui Highway. Bengbu [5] completed 28.252 million highway passenger volumes, passenger transportation 1.55 billion passenger kilometers, highway freight transportation volume 16.05 million tons, cargo transportation 2.86 billion ton kilometer in 2006

The Beijing-Shanghai Railway Line that is China's golden transport routeway and the Huainan Railway Line intersect here. It is the headquarters of Anhui railway network. Railway arrangement capability is 320 trains. Bengbu railway station owns a first-class large freight marshalling yard and the largest container freight yard in East China, and expands the railway-sea combined transport business. Bengbu station is the important railway hub of east China. Bengbu new railway station which will complete in 2010 is the first-class station of Beijing-Shanghai high-speed railway. Passenger traffic volume of 6.718 million; Send cargo volume 2.28 million tons, the volume arrived 1.22 million tons, mainly send cargo are food, construction materials ore, sugar and tobacco, agricultural products, non-metallic mineral products, arrival of goods are mainly industrial use of coal, petroleum (about 60%) and maize (about 30%) in 2006.

Bengbu is located in the middle of the Huai River, the major waterway navigable perennial 1,200-ton capacity. Bengbu is the largest port in the Huai River. The port designed throughput capacity of 1.8 million tons. As trade center in northern Anhui, Bengbu has always been the most important waterway transportation hub of the

[5] All the data in this chapter come from Bengbu Statistic Bureau 2006

mainstream of the Huai River. The ships can be navigable to Jiangsu, Shanghai, Zhejiang and Jiangxi provinces all the year round, and also can take advantage of access the open ports to overseas. Cargo completed in 2006 reached 5.28 million tons, cargo transportation 1.79 billion ton kilometers, and port throughput of 970,000 tons.

Bengbu airport sets for “4C-class” standard, which can take off and land Boeing 747. There are direct flights to major cities.

Bengbu freight volume and freight turnover in 2006 as Table 2 and Figure 1

Table 2 Bengbu Freight volume and Freight turnover in 2006

	Freight volume (million ton)		Freight turnover (billion ton kilometer)	
	2006	increased	2006	increased
road	16.05	6.8%	2.86	6.7%
railway	3.50	2.1%	1.21	2.0%
waterway	5.28	2.9%	1.79	2.8%
airborne	null	0	null	0
total	24.83	5.3%	5.66	5.2%

Source: Bengbu Statistic Bureau 2006

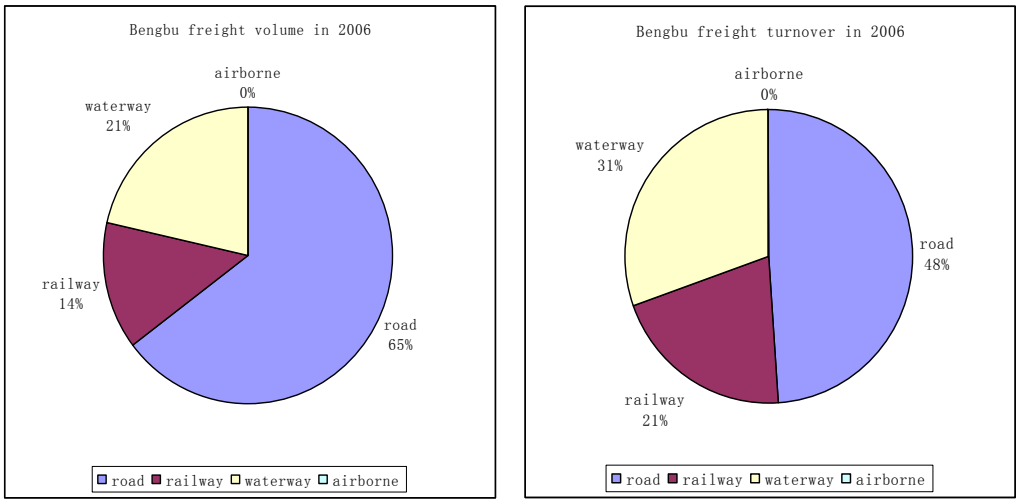

Figure 1 Bengbu freight volume and freight turnover in 2006

3.2.2 Strength and weakness analysis of Bengbu regional logistics

For a long time, Bengbu occupies an important position in northern Anhui commerce circulation fields. Bengbu is Anhui important railway hub and distribution center. With the state owned grain and sugar reserves warehouses, food, beverages, tobacco and goods for agriculture large wholesale markets, various warehouses spread all over the city . With transition from plan economy to market economy and other traffic hub had build, Bengbu status as regional trade center has been gradually declining, and functional shrink gradually. But as a regional business circulation center, Bengbu still can not be irreplaceable.

Bengbu achieved total retail sales of consumer goods 12.079 billion in 2006, an increase of 6.2% than 2005. About 28.1% of retail and wholesale goods purchased from outside the province. 61.9% from the province, import only occupy 2.1%

Logistics activities are to achieve the necessary conditions for commodities, and due to the division of work in society and exchange of commodities give logistics developing space. Using comprehensive analysis Bengbu's historical and current

conditions, the author summarized Bengbu in northern Anhui regional logistics field advantages and disadvantages as follows:

Advantages:

Bengbu has unique geographical advantages. It is located in the junction of northern Anhui and southern Anhui Province and linked to Yangtze River Delta Area.

Give full play to the geographical advantages for is circulation center by Space Radiation Effects.

Bengbu has complete logistics infrastructure, which is foundation conditions of regional logistics activities. Bengbu is the rail, road and waterway transport center of Northern Anhui. Bengbu is one of the East China communicate center and has the obvious advantages of traffic conditions.

Bengbu has complete industrial categories, unlike the other cities reliance on energy or mineral processing industry. This complete category industrial system avoids market risk of demand fluctuations by a single industry. It is also increase the selectivity for Business Process Reengineering

Disadvantages:

Structure reform of state-owned enterprises lags behind the market. The state-owned economy operates inefficiency, which affects the city's economy directly.

The advantages of regional commercial center have being weakened. Bengbu does not adapt any changes to correspond the system reform and re-position, the advantages pristine turn into a disadvantage. The large number of idle assets and Laid-offs become a hindrance to Bengbu's advancement

The separate administration of logistics industry has many shortcomings. Market order is not standardized. Especially the logistics industry operating environment is poor; the main management services innovations insufficiently. A Low-Trust supply

and demand market constraints the traditional dispersive logistics pullulating to modern logistics

3.2.3 Analysis of related factors that influence Bengbu regional logistics development

As a trade center of East China, Bengbu logistics industry has been considerable development in recent years. But compared to the developed areas, BengBu still stays in the preliminary stage.

1) The development of the logistics industry is facing greater market demand constrained.

By the traditional planned economy effect, a considerable number of enterprises still adopt old management. A series of logistics activities from the purchase of raw materials to the sales process rely on the internal organization of enterprises to fulfill. At the same time, most enterprises within the various logistics facilities maintain a higher rate, and important assets. This self-service logistics limited the business demand of high efficiency, specialization and social service logistics' development, which is the current bottleneck hampering logistics development.

2) Low level of infrastructure and logistics equipment has serious impact on logistics efficiency

Although Bengbu has some logistics infrastructures and equipments, there is still a large gap with Bengbu economy and the developing logistics industry requirements. It impedes improving the efficiency of logistics, mainly reflected in: transport infrastructure in smaller scale, logistics facilities and equipment technology and are less standardized, the information technology at lower level.

3) Development of the logistics industry is facing greater restraint system

Different models of transport have larger gap in the transport organization, services and technical standards that makes enterprises difficult to choose reasonable transportation mode according to the market demand. Enterprises only use the single model to launch logistics business what disturbs logistics services coordination.

Various infrastructure planning and construction lack the necessary coordination under the separated management, which resulted tremendous waste of logistics resources and affect logistics coordination.

Due to the protection of local industries and departments, it made an injustice and abnormal competition pattern, which is not favorable to the formation of the social logistics system and cross-regional and cross-spectral logistics network

Because of lacking a clear and effective policy measures, there are many factors against logistics enterprises development in price policy, tax policy and investment policy.

4) Logistics professionals' shortage is the enormous obstacle to logistics enterprises

Logistics is a talent and technology intensive industries. Logistics management needs many compound talents who are familiar with the clients' production and management, knowing the logistics businesses and marketing. As Bengbu logistics industry started late, the logistics talents severe shortage. This will be greatly restricted the logistics industry's rapid development.

3.3 Analysis of logistics infrastructure in Bengbu

3.3.1 Condition of Bengbu transport system and logistics infrastructure

To the end of 2006, Bengbu has highway mileage 2,820 km, including 371 km

expressway occupy 13% of the total mileage, the national and provincial highways are 1490 km. occupy 53% of the total mileage. Countryside has linked roads.

Bengbu railway is the Beijing-Shanghai railway line and Huainan railway line, Bengbu station can load 100, unload 150 trains per day at average. There are three special purpose rail freight yards, 34 railway lines, 19 thousand square meters yards and 9,500-square-meter warehouse in the urban. There is a Railway Container Yard about 40,000 square meters with handling 20,000 TEU containers annually. The truck marshalling yard with 4,500-square meters freight yard, 1,000-square-meter warehouse locates in the eastern outskirts

Bengbu main navigable channel perennial has 1,200-ton capacity, Bengbu mainly waterway transport is cargo. There are 2,266 ships and tonnage 103 million tones. Bengbu New Port is building a 1,200-meter coastline, two 1,000-ton and two 500-ton general bulk cargo berths and a 1,000-ton bulk cargo berths.

3.3.2 Situation about non-main transport system and logistics infrastructure

Bengbu is the technology, processing and business center of Northern Anhui. There are many industrial enterprises. Professional transport enterprises are in the ascendant. The number of various trucks is 17,009 and tonnage reaches 9 million tons in 2006

In the past, Bengbu is an important National Stocking transit center; there are the national and local grain depots, the salt, the sugar, the department store, national strategic goods and military supplies warehouses. Total area is over 1.4 million square meters.

But we must be pointed out that the existing freight site layout unreasonable, the station facilities are outdated. Their quantity and quality and scale are far from the actual need. It is difficult to meeting transport demands by Bengbu socio-economic development

3.3.3 The current situation of Bengbu information network

Bengbu is the largest industrial city in Huai River basin, as well as telecommunications command center of North Anhui. It is the only master control station of Microwave Communication about the Beijing-Shanghai route and long-distance communications hubs in Anhui. Information infrastructure and networks are on the advantageous conditions. With economic development, Bengbu speed up the information technology popularization and application, the information infrastructure of the Internet is beginning to take shape.

There are 900,000 telephones in Bengbu. Mobile phone users are more than two million people. More than 30 million households are using broadband networks. The optical fiber network will be constructed in area of metropolitan that will achieve the backbone network infrastructure of urban information and logistics information technology.

Bengbu cable television network has 550 MHZ/750 MHZ bandwidth with 700 thousand clients. It can be transmitted analog TV programs and digital television programs. Nowadays data can be transmitted by cable TV network. It will play a role in information industry in the future.

The commercial terminals in Bengbu almost use POS systems. Many enterprises develop and application their office automation system and management information system. Intranet has been established. The information management and sharing information resources are primary realization.

Good network infrastructure provides the necessary hardware to establish the metropolitan intranet and all business linked information network. It also creates the network environment for the modern regional logistics information system

3.4 Main conclusions of this chapter

This chapter analyzes the Bengbu the current social and economic situation. Facing the decline of Bengbu regional logistics center, the author makes a careful analysis and collect 10 years of data for subsequent analysis that have laid a good groundwork.

Chapter 4 Cointegration analysis of regional logistics capacity and enterprise performance growth

4.1 The condition of enterprise performance and regional logistics capacity evolution

Regional Logistics is the tie to production, circulation, distribution and consumption to various departments and different regions in regional economic activities. Regional Logistics capacity reflects and affects regional economic development in certain extent. Quantitative study of regional logistics capacity coordination with the regional economic development will enhance regional economic competitiveness with strategic significance

Regional logistics capacity is too complexity to measure. From the system perspective, regional logistics capacity has two attributes: First, the regional logistics demand capacity. Second, the regional logistics services supply capacity. The scale and structure of regional logistics supply capacity decides the scale and structure of the regional logistics services capacity. The level of regional logistics demand capacity reflected the regional economic development scale in a certain extent. As a result it has an impact on Local enterprises performance

A lot of empirical researches argument relations about the marketing with logistics services operational capacity, the relationship with customer satisfaction. In the logistics field, researches show that the logistics operation capacity and logistics services supply capacity is higher, customer satisfaction is higher. It will stimulate logistics capacity higher. Thus, this study engenders two assumptions: Regional Logistics operational capacity is higher, the enterprise development level is higher; Regional Logistics supply capacity is higher, the enterprise development level is higher.

4.2 The effect of regional logistics capacity to enterprise performance growth

From the macro perspective, the development of the logistics capacity should consider the logistics and the national economy, logistics and technological progress and social development, logistics and consumption structure, logistics and the environment, international trade and logistics and other relevant factors.

Logistics play an increasingly important role in developing economy. Economic is rapid upgrading of the logistics dependence degree. The first important condition of developing countries promoting the domestic market is perfecting transportation nodes and logistics infrastructure construction. Having logistics capability is a precondition to economic development.

4.3 Case study----analysis of Bengbu logistics capacity and BBCA Group performance

4.3.1 Logistics system analysis of BBCA Group

BBCA[6] Group is the biggest enterprises in Bengbu with a staff of 19,200. It is named in the world's biochemical field. In 2005, BBCA Group realized total sales revenue of RMB6.5 billion. All the products from BBCA have been provided to international famous food, pharmacy, beverage, scour, precise chemical industry and cosmetic enterprises for a long time. The deep processing capacity has reached to 3.6 million tons per year on agricultural products under the development of past ten years. The author chooses it as enterprise performance study for the most representative. Its import and export trade accounts for half of Bengbu turnover. It plays a decisive role in Bengbu regional logistics capacity development.

All of the BBCA logistics business commits by its subsidiaries-- the Anhui BBCA Logistics Limited. Anhui BBCA Logistics Limited has more than 300 employees, transport vehicles more than 100, as alcohol trucks, container-trucks, lorry trucks, dump truck, loading trucks.

Logistics systems mainly based on rail and road transport. The logistics company not only assumes the ordinary goods transport, domestic and international container transport, but also assumes Less-than-Carload distribution and waterway transport, rivers and seas combined transport. Nowadays the average daily volume is 15,000 tons. Company has 300000 square meter private rail freight yard. Four special railway lines are more than 2,000 meters length, including a chemicals cargo line. It is the largest special-owned freight yard in East China. There’s a 100 tonnage rail weighbridge, 2 vehicle weighbridge about 80 tons, the two 32-ton gantry crane, 40,000 tons of steel silos, 2,600 square meters duplex warehouse, the cargo space for 120 wagons raw materials.

[6] All date from BBCA Group Web Site www.bbca.com.cn

4.3.2 Cointegration analysis and proof appraisement

4.3.2.1 Extracting analyzing data

To study relationship between regional logistics and enterprises performance that exists prodigious difficult this is hardly to select logistics representative indicators. It is impossible to find a completely measured indicator of the scale of the logistics development. At present, China's logistics industry is still with incomplete statistics, we only get the volume of cargo transportation and other logistics related indicators have not published statistics what increased the issues difficulty.

It is believed that the transport is the most realistic way linked to the economic link. Half of logistics cost relates to transport, It can be said that the transport is the most important activities of logistics. Transport-related indicators are freight cargo transportation volume. Therefore, all the transport volume can be approximated by the representative of the social scale logistics. The other hand, there is a close correlation between the volume of transport and storage volume in certain social conditions. So selecting the transport cargo volume it can seize basic demand logistics capacity. This paper chooses the Bengbu freight turnover (billion ton) for representative indicators of the logistics scale.

Table 3 freight turnover in Bengbu 1996-2005

year	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Freight turnover	3.32	3.59	3.66	3.84	3.81	4.06	4.43	4.77	5.07	5.38

Source: Bengbu Statistic Bureau 2006 unit: billion tons kilometers

This paper use BBCA profits as enterprise performance characterization indicators. In the recent 10 years, BBCA was most typical operation. The author only used 1996

-2005 year's data.

Table 4 the profits of BBCA 1996~2005

year	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
profits	93.5	117	135.8	148.9	156.7	164.1	178.9	194.6	210.3	234.5

Source: www.bbca.com.cn unit: million RMB

4.3.2.2 Introducing modeling method

Cointegrated Process is a special unit root process. Cointegration described the long-term balance relationship of economic system. It descripts two or more non-stationary time series at the balance relationship. However each time series such as mean, variance and covariance changed with time. Some of these sequences linear combination (balance relations) moments with the same characteristics. If a time series after a first order difference will be stationary, we call the sequence as first order integrated series, also known as self-plot sequence.

Engle and Granger[7] gave four simple rules of single integral sequence

Rule 1 if xt~I(0), Then a+bxt is I（0）;

If xt ~ I(1)，Then a+bxt is I（1）. a, b is constant

Rule 2 if xt ~ I(0), yt~ I（0）, Then axt+byt is I（0）

Rule 3 if xt ~ I(1), yt- ~ I（0），Then axt+byt is I（1）, and I（1）with the dominant nature

This rule can be extended: if xt ~ I(d)，yt ~ I(e)，and d>e, Then axt+byt is I(d), axt+byt ~I（max(d, e)）.

Rule 4 according to rule 3, if xt ~I(1), yt ~ I(1), then axt+byt is I(1).

[7] Engle, R.F., Granger,C.W.J(1987). Cointegration and Error Correction. Representation, Estimation and Testing *Econom trica, 55(2)*. 251-276

The prerequisite of quantitative model is that time series is smooth. According to these statistics we estimated the model. The inferred results are often incorrect. Return is maybe meaningless pseudo-return. In the economic field, a lot of time sequences are not the smooth process. Those need to be turn from non-stationary process into a smooth process or nearly stationary process. Cointergration proposed non-smooth multivariable time series analysis which has provided a strong theoretical and methods.

If the variables X and Y is I (1) sequence, their linear combination may be cointegrated. Their linear combination is stability I (0) process. Although many factors, the individual elements of Xt have had a permanent change. There are still some long-term balances. These variables in the short term may be at non-equilibrium state. But in the long run, they tend to change in the balance together. Therefore, if time sequence of two economic variables exists cointegrated, then we said that the two economic variables is balanced long-term growth relationship. It is economic meaning of cointegration

4.3.2.3 Data analysis

Generally speaking that stable inspection (ADF) technology is the most effective tool for sequence stability test. Through increased variable lag items to eliminate the residuals from related items. The testing method, known as ADF inspection

First select 1996 -2005 Bengbu freight traffic, using next year's freight traffic minus the previous year freight traffic, We have get the logistics Value-Added of the calendar year it applied for the characterization of the incremental logistics. It is short for ⊿LV.

⊿tLV＝LVt－LVt-1

LVt－YEAR T ‘s freight traffic LVt-1 －YEAR(T-1)’s freight traffic.

The second time sequence: the selection of 1996 -2005 BBCA profits, using next year's profit minus the previous year's profit, we received the time series about profit value-added of reflecting the enterprise performance.

⊿t profit＝profitt-profitt-1

⊿t profit—YEAR T’s Profit value -added

BBCA profits and Logistics value-added time series unit root test

Table 5 Profit Volume Increments time series Augmented Dickey-Fuller Unit Root Test

test type	ADF testing values	significance level	critical value	test result
Profit value-added				
time series	0.448504	1%	-3.5682	non-stationary
		5%	-2.9215	non-stationary
		10%	-2.5983	non-stationary
DW ： 1.857777				
profit value-added				
time series	- 5.339581	1%	-3.5713	stationary
first order		5%	-2.9228	stationary
difference		10%	-2.5990	stationary
DW ： 1.695738				

Table 6 Logistics Volume Increments time series Augmented Dickey-Fuller Unit Root Test

test type	ADF testing values	significance level	critical value	test result
logistics				
value-added	2.043105	1%	-3.5682	non-stationary
time series		5%	-2.9215	non-stationary
		10%	-2.5983	non-stationary
DW：2.002035				
Logistics				
value-added	-6.323856	1%	-3.5713	stationary
first order		5%	-2.9228	stationary
difference		10%	-2.5990	stationary
DW：2.072486				

The value-added of logistics and profits in the first order difference are stationary time series. So they are I (1) series.

Testing whether existed cointegration relationship between variables and accurate estimating this relationship that is two complementary processes. When time series are two-dimensional, there may be only a linear cointegration relationship. EG-steps is a very effective and the most commonly used method to test the single equation cointegration relationship.

Through the calculate, we get the estimate formula about Logistics and Profits Value-added

$$\Delta profit = 0.3187\,\Delta LV + 0.4321\,\Delta profit(-1)$$

(t=4.74 ; t=4.798)

(se=0.054; se=0.104)

R2 = 0.6875

Table 7 the ADF unit root testing of the Equation Residual Error

ADF test value	Freedom degree	significance level	critical value	Test result
-5.493518	47	1%	-3.5713	stationary
		5%	-2.9228	stationary
		10%	-2.5990	stationary
DW:2.00				

From the testing results, the residual errors are not unit root in significance level 1%. It is the stationary time series. The result explains that the logistics value-added and the BBCA profits value-added is first order cointegration relationship.

4.3.2.4 Models qualitative analysis

From the model, we can see that the enterprise performance changes are closely related to the logistics changes. Incremental corporate performance from the long-term view, the current logistics increment and last incremental of the enterprises performance are positive relations with the enterprises performance incremental. Along with the logistics incremental increase, the enterprise performance incremental also increased.

4.3.3 The analysis of improvement caused by development of Bengbu regional logistics capacity to BBCA performance

Along with the rapid development of enterprises, raw material of production and finished products' volume is growing rapidly. The third-party logistics have not satisfied the company growing logistics demands. The old distribute lacks flexible and rapid response system. Moreover, in today's world market has become dynamic

change and product life cycle shorter, little production. Customers require the products delivery, prices and quality in the high level. The enterprise has been focusing the competition from the scale and cost shift to the speed of the core competitiveness. Logistics capacity logistics and performance will be the core competitiveness of enterprises.

Fully integrated enterprise logistics resources and made the rapid response to the market that is to meet customer demand and to improve the core competitiveness. BBCA merges other logistics enterprises to own the private rail freight yard. The company reorganized logistics departments.

With the BBCA expansion especially the fuel ethanol project, corn and other raw materials transportation volume will soar. BBCA needs to strengthen infrastructure construction and improve operational capacity to meet demand for fuel ethanol which may expand the scope of delivery and distribution volume. Meanwhile, Bengbu is building the Newport. The Group should prepare waterway transport to reduce operating costs. Using waterborne transport advantages, BBCA can expand business scope and increase operating income.

4.4 Main conclusions of this chapter

This chapter selected freight transportation as logistics capacity characterization indicators and selected corporate profits as BBCA enterprise performance characterization indicators.

Despite the various links to logistics, the transport is a necessary condition for logistics. Regional freight transportation volume treated as logistics capacity

characterization indicators is more reasonable. Choosing profit as enterprise performance, it reduces calculated amount.

Using EG two steps the author makes a cointegration analysis between regional logistics capacity and enterprise performance. The results showed two parts have obvious cointegration relation; the conclusion has a certain reference value for the regional logistics capacity planning.

Chapter 5 Analysis of Bengbu logistics capacity in the future

5.1 Forecasting and analysis of Bengbu city logistics capacity

The key of Bengbu logistics capacity forecast is to master every transportation mode capacity, the structure and flow of total cargos accurately. Therefore, the projections will be based on Bengbu economy, cargo data and the local transport capacity. The freight volume is forecasted with Bengbu "the 11th Five" Plan and the socio-economic development targets in 2010~2015. With freight volume data we forecast Bengbu logistics demand and supply capacity.

The future Bengbu logistics supply volume is determined by the Bengbu logistics supply capacity. Bengbu existing logistics supply capacity can be aware of the chapter 3. The following table 6 shows last 5 years freight transport volume. If Bengbu has no logistics infrastructure investment in the next 5-10 years, Bengbu logistics supply capacity does not have much change.

Therefore, we should establish a scientific and reasonable prediction model; make the quantitative prediction for logistics demand and regional logistics development policies. We should determine the scale of logistics infrastructure construction and provide quantitative analysis for logistics market trend study. Those are very

important to the logistics industry sustainable development. This paper introduced GM (l, l) model to predict the volume of logistics,

Introduction the GM(1.1)

If given the original data: x (0)= (x (0),(l) , x (0) (2),… , x (0),(n))

x (0) AGO sequence:

x (1)(k)= x (0)(k-1) + x (0)(k) k = l, 2, … , n ①

A new generation of data as a monotonous growth curve, it increases the raw data regularity and weakens volatility

GM(1.1) definition: x (0)(k) + az(1)(k)=b ②

x(0) is the original series modeling ， x(1) is x(0) AGO sequence, z(1) is x (1) SERIES MEAN，a is development coefficient，b is grey action.

Z(1)(k) =0.5(x(1)(k)+ x(1)(k-1)) ③

The Parameter C=∑z(1)(k), D=∑x(0)(k),E=∑z(1)(k)x(0)(k), F =∑z(1)(k)

That a = $\frac{CD-(n-1)E}{(n-1)F-C2}=\frac{\nabla a}{\nabla}$ b= $\frac{DF-CE}{(n-1)F-C2}=\frac{\nabla b}{\nabla}$ ④

GM(1,1) whiten type $\hat{x}$（1）（k+1）=(x(0)(1)-$\frac{b}{a}$)e-ak+$\frac{b}{a}$ ⑤

$\hat{x}$（0）（k+1）=$\hat{x}$（1）（k+1）-$\hat{x}$（1）（k） ⑥

sequence test σx(k)= $\frac{x(k+1)}{x(k)}$ ⑦

Gray sequence model stepwise ratios σ(k) must be in the area（0.1353, 7.389），that can be made the GM(1.1) model. This is the basic conditions. In order to obtain

higher accuracy of GM (1.1) model stepwise ratios $\sigma(k)$ should be as close as possible to fall into a sub-interval $(1-\varepsilon, 1+\varepsilon)$, this subinterval is called containable space.

Using GM (l, l) model and the data in Table 1, we forecast the logistics volume in 2010~2015. The steps are as follows:

original series: x (0)= (x (0)(l), x (0)(2) , x (0)(3), x (0) (4), x (0)(5)) = (19.41, 20.92 , 21.86, 23.58, 24.83)

According to①, x AGO series: x (1)= (19.41, 20.92, 21.86, 23.58, 24.83)

stepwise ratios test：from ⑦: $(e^{-2/(n+1)}, e^{2/(n+1)})$ =0.71653131, 1.395612425

σ = (σ (2), σ (3), σ (4), σ (5)) = (0.9277,0.9570,0.9400,0.9367), $\sigma \subset$ (0.1353, 7.389).

stepwise ratios pass containable space，Show series is smooth, which can the series Gray forecast.

stepwise ratios region test: n = 5,

stepwise ratios region:（$e^{-2/(n+1)}, e^{2/(n+1)}$）=0.716 531 31,1.395 612 425

$\sigma \subset$ (0.7165,1.3956) ， stepwise ratios pass containable space that shows we can get higher accuracy FM(1.1) model.

According to②③④, a=-0.058035, b=76205.617209, b/a=-1313106.823721

The GM(1.1) forecast model: $\hat{X}(1)(k+1)=(x(0)(1)-b/a)e-ak+b/a$

=1390751. 8 exp(0.058035k)-1313106.823721

$\hat{X}(0)(k+1)=\hat{X}(1)(k+1)-\hat{X}(1)(k)$

Table 8 residual errors test

Year	Real value $X^{(0)}$	simulated value $\hat{X}^{(0)}$	residual errors △(k)	relativistic error（100 %） ε（k）
2003	20.92	20.77	0.15	0.709
2004	21.86	22.02	-0.16	-0.695
2005	23.58	23.83	-0.25	-0.308
2006	24.83	24.72	0.11	0.426

unit million tons

Average relative errors: ε (avg) = $\varepsilon(avg) = \frac{1}{n-1}\sum_{k=2}^{n} l\varepsilon(k)l = 0.5345\%$

Credibility: Pr =(1-ε (avg))*100%=99.466%　the forecast is accuracy.

Table 9 Bengbu logistics volume forecast form 2007 to 2011

Year	2007	2008	2009	2010	2011
Logistics Volume	26.20	27.77	29.43	31.19	33.05

unit: million tons

Comparison with the other model such as the qualitative analysis method, regression method and time series prediction method, GM (1,1) model has fewer data requirements and its principles are simple. The calculation is accuracy.

But it needs to be pointed out that GM (1,1) is suitable for short-term forecasts which can not be used for a longer period of time forecast. Otherwise it will have a greater error. In order to forecast longer trend, we need introduce new data, thus ensuring the reliability of predictions.

From the angle of Bengbu logistics supply and demand in balance, associated with the analysis in the chapter 3, supply capacity insufficient is the main contradiction of

Bengbu future regional logistics development, reflecting on logistics infrastructure behind local economic development. And its layout is irrational reflecting on logistics infrastructure behind local economic development, its layout is irrational, logistics services in decentralized organizational and so on. Governments and enterprises must make a suitable regional logistics development planning to promote local economic development.

5.2 Logistics volume forecasting and analysis of north area of Anhui province

As for the positioning the processing and distribution center of Northern Anhui Area, Bengbu will play the lead role in the region's industrial chain. The logistics chain of northern Anhui will build the regional network system of Bengbu-center. It will provide support for the northern Anhui industrial development. From the perspective of future logistics demand trends in northern Anhui, there is practical significance for constructing Bengbu-center of Anhui northern regional logistics system

Regional logistics forecast: first based on historical data to determine the trading transport intensity (transport volume of per million), then forecast the corresponding transport intensity under the future cities economic development, this predicted about the volume of freight transport in the next critical years, estimates warehousing, distribution capacity and other aspects of the logistics. Due to the lack of relevant data, we only make qualitative analysis.

On the last 10 years, Northern Anhui area municipalities' trade transport intensity has decreased in varying degrees. Analyzing the reason, they are two factors; first, due to improved product structure, the proportion of high value goods increased; second, commodity prices was general increase. These two factors still exist in the future, as well as impact on logistics.

Based on the future regional municipalities transport intensity and trade growth trend analysis, we can forecast next critical years transport cargo volume in table 9

Table 10 next critical years transport cargo volume in Northern Anhui

Year / Region	2007	2010	2015
Huaibei	22.13	27.31	34.17
Suzhou	15.39	19.20	24.15
Bengbu	26.20	31.19	36.20
Fuyang	24.89	29.33	34.21
Bozhou	19.56	22.31	28.91
Huainan	21.47	26.73	30.24
total	129.64	156.07	187.88

unit: million tons

Estimating storage volume need different urban products marketing experience and history data analysis, estimated the storage volume is very difficult, but there is a positive correlation between its size and scale to transport volumes. Storing cargo can have the space and opportunities for value-added services. If not affect external factors of logistics development, the determine factor to storage scale and value-add space is local supply logistics capacity services and its quality. If supply logistics capacity services and its quality higher and market larger, storage capacity and logistics value-added services are also larger. On the contrary, it will be smaller.

The regional logistics is still in the traditional decentralized operational stage, on the one hand, achieve comprehensive restructuring of the services market conditions are not adequate; on the other hand, the modern logistics has the huge potential. To

develop regional logistics, we have focus was on:

- Speed up developing the regional logistics supply and demand market and create an open market
- Integrated logistics resources and formation a resource sharing logistics service network
- Accelerating developing the logistics services company which will promote the regional logistics network operation.

5.3 Research of uncertainty problems faced in the regional logistics capacity planning

In specific economic activities, there are often some major production projects launched and expand which made the local logistics having a significant incremental growth, There are also some enterprises' particular products logistics volume fluctuations during to market supply and demand changes. Under such circumstances we need a typical case study and market analysis to grasp.

The large enterprises on Bengbu such as BBCA, Anhui BAYI Chemical Industry Co.Ltd, FANGING Science & Technology Inc., need transport a large number of raw materials to process. Finished products market are wide distribution and generating huge logistics volumes the production and processing adjustments of these enterprises make the greatest impact on logistics scale of Bengbu.

China Guodian Corporation[8] invests a thermal power plant in Bengbu. There is 120 million kilowatts commission at the first phase in 2009. There are 120 million kilowatts at the second phase in 2013, which will bring Bengbu 6 million tons of fuel

[8] www.cgdc.com.cn

coal transport volume annually.

Logistics Incremental volume of BBCA six-million-tons fuel ethanol project will be significantly enhanced regional logistics capacity. Large wholesale center of Bengbu circulation industry will promote the development the related activities and value-added logistics services. These specific factors in the making logistics center planning should take into full considerations.

5.4 Main conclusions of this chapter

This chapter makes a quantitative forecast of Bengbu logistics capacity and estimate logistics capacity in Northern Anhui of the next decade. The author analyses some uncertain factors possible existent. The paper made a preparation for the next work about regional logistics capacity planning.

Chapter 6 The suggestions of corresponding Bengbu regional logistic capacity and local economy

6.1 Rational logistics capacity planning to promote local economy development

Nowadays, the solution of core logistics development problem is that professional enterprise operates logistics business, so that it can make full use of infrastructure facilities. Because the logistics industry still exists too many branches. It's investigated that most companies in Bengbu own warehouse and transport facilities. Resource dispersing and serves insufficiency occurring in that situation, Market can not be met the resource demand, which becomes burden of the market. It is necessary to integrate operation models of modern logistics.

According to modern logistics system's requirement, the Bengbu logistics operation model should be 'Government positions, market operates'.

Government should make macro-regulation and controlling functions in the development of regional logistics. They may integrate logistics infrastructure resources, plan a uniform logistics infrastructure layout and lead logistics information system construction and operation. Government should establish an open market system and constitute the uniform standards and policies in logistics

field.

In order to reach the goal of regional logistics center, the market should break industry barriers and regional discriminations. The Bengbu logistics aimed at two aspects. The first one is cultivating logistics enterprises by transformed mechanism and integrated resources. The second one is cultivating a good environment for promoting the local economy.

Currently Bengbu regional logistics service needs introduce external business management, especially breaking market barriers to encourage domestic and foreign enterprises to launch logistical business in Bengbu.

6.2 Bengbu regional logistics capacity planning

6.2.1 Guideline and development objective of regional logistics capacity planning

Considering Bengbu's transport and communication infrastructure, storage facilities' status and service capabilities, we make full use of existing logistics resources and reactivate the logistics idle assets. We also should improve the existing infrastructure, optimize logistics resources and build new logistics infrastructure appropriately.

In Bengbu regional logistics planning, it is necessary to consider the entire city and radiation regional logistics needs and the existing logistics resources available. Meanwhile, we should focus on long-term economic activities which influence growth trend of modern logistics services. The development mode should be a planning, asymptotic approach.

In the regional logistics system planning, we should deal with the relation between

regional logistics capacity and good logistics support for socio-economic activities and local pillar industries properly. On the one hand, logistics industry itself can be used as an industrial development and it contributes to local economic growth. The other hand, logistics service is used in social economic activities, and it plays important role in improving efficiency of production and communication and providing work opportunity. In addition Bengbu regional logistics center planning must have coordination between region's socio-economic and industrial development.

Relying on Bengbu City’s geographical advantages, the industrial advantages and logistics infrastructure advantages, we strengthen organization and management of logistics, and vigorously promote information and network technologies in the fields of logistics. We integrate the city's logistics system and the development of e-business. According to the supply chain management principles, we vigorously promote regional logistics and distribution, multimodal transport, commerce and other modes of services in North Anhui region. Bengbu intends to establish a unified standard commodity distribution system with neighboring cities, coastal ports and even linked to the whole country.

To around 2010 we plan to form a unified logistics information network in North Anhui region, and establish several characteristics logistics center and urban distribution centers. Those centers provide support platform for various logistics service and information service. Meanwhile Bengbu should foster several business entities to drive Bengbu city and the surrounding business network of modern logistics. We advance the development goal comprehensively treating Bengbu as regional logistics center in east China's development goals

6.2.2 Function position of regional logistics system

We make clearly two points in regional logistics positioning system. The first one is to find out Bengbu regional logistics competitive advantages and disadvantages. The second one is that Bengbu is to enhance the competitiveness of the logistics industry. Bengbu Regional Logistics System and its function will be set in accordance with above principles. It takes into account the logistics needs, size, structure and logistics supply-side conditions at percent. It also taken into account socio-economic development of radiation in the region and the eastern region, interaction, that industrial chain link with the rapid development of modern logistics in time and space. By doing that Bengbu gradually extends regional logistics capability.

6.2.3 Choice of Bengbu regional logistics development model

On regional cities, the choice of logistics development model is according to its urban functions, logistics needs, policy guidance to logistics industry, the future market demand potential, existing logistics infrastructure layout and merchandising resources and so on.

Nowadays the main factor that Bengbu logistics facilities layout does not fit the logistics needs and whole city layout of industrial development is that the city's existing storage mainly concentrated in the east area. The west and the south area lacks dedicated logistics facilities.

Comparing these two distribution model, functional integrated logistics park is not suitable for Bengbu City at this stage of development, and functional decentralized logistics center is more suitable model for Bengbu.

The logistics system of one city or region is consisted of several logistics centers. Their characteristics, size or function may be different. Those centers are located in different places according to local industrial space layout, city district, the existing transportation, warehousing and other infrastructure to the distribution. Those centers make up with each other, interconnected their chain operations, share information and form a regional organic logistics system. In this system, the information network' is very important, it will connect all the function sections together. According to Bengbu City’s actual situation, functional decentralized logistics distribution should be chosen. Its model is consisted of different sectors or enterprises in storage facilities, freight station, whose function is optimized and restructured. We can see Bengbu City Logistics System framework in figure 2

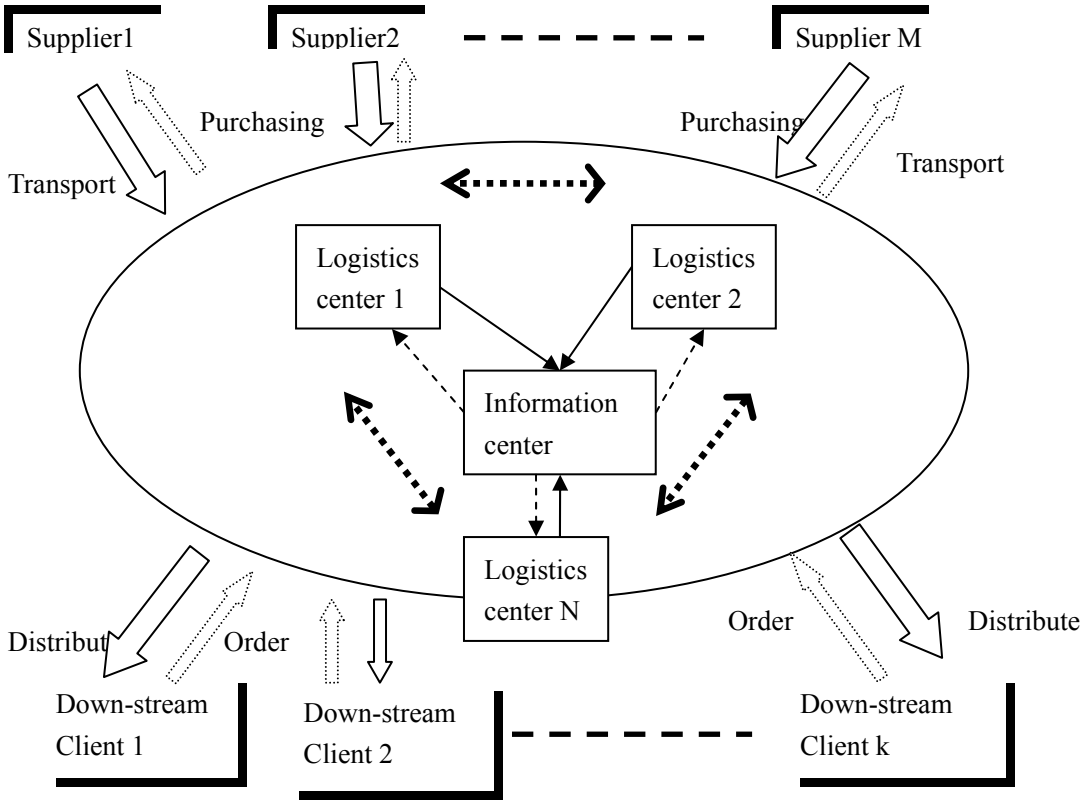

Figure 2 internal network frame of Bengbu city

6.2.4 Network planning of logistics in Bengbu

6.2.4.1 Network planning of transportation and distribution

Bengbu should make full use of Bengbu rail, road and river transport features and developed combination advantages to improve the overall efficiency. The transportation distribution network includes external transport system and internal distribution system. Using Beijing-Shanghai high-speed railway construction for reference, Bengbu adjusts its railway site, build a new railway line and build land-river intermodal terminals. Bengbu improves highway network construction, constructing Huainan highway and cooperating with central States to build China Guodian Corporation which is 2400 million watts of power plant construction.

Bengbu speeds up the construction of highways rounding urban, the city's main thoroughfares and the sub-distributor network. It should arrange freight organizations reasonably, and set up a number of small logistics center in different districts.

6.2.4.2 Planning of assisted Public Facilities

According to logistics system and function requirements, we also need consider to plan support projects and accessorial public facilities, including transportation system of logistics centers, the environmental protection systems of logistics center, the security operating system, as well as the drainage, electricity, communications and other infrastructure.

6.3 Opportune regional logistics information system for local economy development

6.3.1Basic technique of regional logistics information system

The rapid development of modern logistics benefits from usage of the fast and accurate information and communication technology. Its most notable feature is based on computer, communications technology and internet. The information and communication technology uses bar code, EDI, RFID, e-commence, GPS etc. It transfers information of each section in the logistics system. The information and capital flow in logistics is rapid, safe and unimpeded. The information technology makes our logistics more efficient and modernization, greatly expanding the logistics time and space. Then it forms a new management style

Information Technology plays two important roles in promoting logistics: The first

one, it raises the enterprise's cargo capacity and lowers average operating time. So logistics routes are more reasonable. The second one, the logistics technology can increase the clients' logistics needs in logistics development stage. It makes logistics informational, being network, intelligently and transparently gradually. And the logistics service is improved gradually. This trend enables enterprises and logistics service providers closer than before and shared their information further. That would be helpful for providing better services and attracting more customers.

Therefore, there is obvious correlativity between the application level of information technologies and the local logistics capacity level. A lagging regional information system inevitably restricts the local logistics capacity.

6.3.2 Network planning of regional logistics system

The first task in development of Bengbu regional logistics is improving logistical enterprises' internal information network, according to Bengbu logistics situation.

With the Logistics Information continuous development and improvement, it will gradually form a logistics center in Bengbu. Logistics Park and new third-party logistics enterprises will open to the whole city. All kinds of logistics enterprises will base on Municipal Area Network to operate their business. By Municipal Area Network enterprises manage to exchange data from internal network and from external data. The net settlement is achieved by data communications. Taking into account the safety of data exchange, we should use firewalls and data encryption technology. The data exchange is realized in Customs industry, insurance, industry and other financial institutions, which improves those industries' work efficiency and assure data accurately, safe real-time.

Many enterprises use the Municipal Area Network to exchange their data. A lot of their clients also can connect with Municipal Area Network by internet. Through the public information platform of logistics center, these enterprises achieve information communication, and get purchase, sale and service information. So logistics, information, and capital can be flowed smoothly in the whole society.

The city's logistics information system is constructed in the unified planning and uniform standards. This information system is consisted of the logistics center's information platform construction, the logistics information center's network debugging and the clients' network debugging..

6.4 The policy for Bengbu regional logistics capacity to promote local economy development

6.4.1 Make preferential policies to promote regional logistics capacity

Bengbu city constitutes a unified city logistics development preferential policy to promote modern logistics industry's rapid development. The series of supporting strategies includes those following policies:

- Land preferential policy: The government gives land usufruct favorable policies for the investors to build the logistics center. Using land exchange and compensation policies, logistics center attracts the logistics companies moving from the urban.
- Preferential investment policies: Bengbu government provides preferential policies for all companies who investment and operate logistics center which refer to Bengbu preferential policies for foreign investment.
- Preferential tax policies: Bengbu government provides preferential policies

for logistical enterprises in business taxes, corporate income tax and so on which refer to Bengbu preferential policies for foreign investment.

- Preferential policies for the supporting construction of urban infrastructure and facilities: Bengbu government prefers to build electricity power, drainage, communications lines, and transport network for logistics center.

6.4.2 Enhancing public service quality

The government is the leading guidance to promote logistics information. Regional logistics information platform owes to the public products. Municipal Information Network construction will be accelerated by government.

The lacking of logistics talents also is one important factor that constrains the local logistics development. The government should enhance the logistics professional training and attract talents.

The customs, commodity inspection, ports and other administrative departments should raise their service sense, improve work efficiency, and change the work style. The local government should provide a good environment for the local economy, maintain social stability and promote local medical, education level.

6.4.3 Coordinating with different departments

There should be a promotion development group that is led by government to drive the development of regional logistics. At percent Bengbu City's scattered logistics situation can't be improved to form a cohesive force without governmental coordinate efforts. Various industries departments have their own interests and

historical problems or realistic problems. These problems array form economics to society. Especially the assets disposition, personnel streaming and lay-out problems are very complexity. Only government can get all the representation together. In the group they consult and negotiate every part's interests together to reach a consensus. it will promote Bengbu's regional logistics capacity to develop healthy and rapidly. Meanwhile, the group should research national and Anhui's policies and industry standards， then bring forward Bengbu regional logistics regulations and preferential policies. Railway institute must be a member of this group. As Bengbu city's regional logistics development is based on Bengbu, it will gradually be extended to other cities in Northern Anhui. The northern cities in Anhui should strengthen regional logistics development and cultivate the united market in the inter-city areas.

6.5 Main conclusions of this chapter

According last chapter, this chapter forecasts Bengbu regional logistics capabilities in the future, and gives a plan of regional logistics capacity in the next 10 years. For too much factors that regional logistics has, there may be some shortage in some areas, and it should correct in practice.

Chapter 7 Conclusion

7.1 Research summary

Logistics capability is a hot issue of research field in the recent year. There are more issues need to study. Based on the existing logistics theory, combining the foreign research results with practical conditions of China, the field of the research of regiona logistics capacity is widened constantly.

In this paper, the research is mainly study on relationship between the regional logistics capacity and the performance of enterprises. The main conclusions were as followed:

1) We should consider the logistics capacities playing the important role of the local economic development. Through the regional logistics capacity and the performance of enterprises co integration analyses, the results showed that the logistics have an important restrictions action to the enterprise's development and steady.

2) Factors of Influencing Logistics Capacity are complicated. Not only logistics infrastructure and information technology factors exist in China, but also we have social development environmental problems. The government should play the

leading role in those areas.

3) This dissertation is an attempt to take a review of literature, makes some recommendations to develop Bengbu's regional logistics capacity. The result indicates that we should ameliorate structures of Bengbu's logistics capacity and promote the position of Bengbu as regional logistics center. I try my best to fill some academic gaps and make some useful attempts

7.2 The fellow research

In this dissertation, an attempt has been made to examine the regional logistics capacity and enterprise performance. With the development of the social economy and the thought of sustainable, the concept of logistics capacities will be further enhanced. How to improve Bengbu regional logistics capacity is a complicated and systematic project. There are still some issues need to pay attention:

1) Different enterprises have different test indicators of the logistics capacity under their varied objectives.

2) Logistics capacity planning and costs of ecological protect.

3) Logistics infrastructure capacity and logistics operating capabilities have progressed in coordination.

4) Effect of information technology, flexible production and modular production on regional logistics capacity.

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