

On improving the statistical index system of the circulation industry in China^{*}

Yi Shaohua^{**}

With the rapid development of China economy, especially the rapid spread of information technology, circulation industry develops quickly and plays a more and more important role in macro economy, so it is very necessary to scientifically and effectively measure the industry operation and the impact on national economy. This paper analyzes the problems of the present statistical index system and setting of indicators and proposes some suggestions on improving the statistical index system and setting of indicators in domestic trade, so as to improve the statistical system in circulation industry, thus make a better evaluation and assessment of the operation and development of the industry and furthermore provide a more scientific and precise basis for policy-making in economic activities.

Keywords: China, statistical index system, circulation industry

Along with the rapid spread of information technology in recent years, the circulation industry in China has been expanding sharply in both scale and scope. The rise of a new business model represented by e-commerce has in particular brought about revolutionary changes to the circulation industry and has drawn growing attention from different sectors of society to its development. Faced with this new situation, how to make use of a scientifically sound and effective statistical index system to improve the setting of indicators for the purpose of giving an objective account of the operation and development of the circulation industry, and its impact on the macro-economy and providing guidance for policy-making and industry development has become a crucial project for both government sectors and related fields. After combing through and summarizing current statistical index system of the circulation industry in China, the author analyzes the problems of the present statistical index system and the setting of indicators and proposes some suggestions on improving the statistical index system and the setting of indicators in domestic trade, so as to perfect the statistical system in circulation and thus make a better evaluation and assessment of the operation and development of the industry and furthermore provide a more scientific and precise basis for policy-making in economic activities.

^{*} This paper is a work-in-progress report for a Ministry of Commerce project titled “*Improving the Statistical Index System of Circulation*”. The project is a collaboration between China Logistics Information Center and National Academy of Economic Strategy, CASS. He Hui and Yi Shaohua are in charge of this Project and Yi Shaohua is the author of this paper.

^{**} Yi Shaohua (email: yishh@cass.org.cn), Research Fellow, National Academy of Economic Strategy, Chinese Academy of Social Sciences.

1. The definition of circulation statistics

“Circulation,” derived from Marxist economics, mainly refers to the intermediate processes between production and consumption, and particularly to the circulation of products. “Business” is often used in China traditional economy pattern (here which means similarly to distributive trades according to International Recommendations for Distributive Industry Statistics in 2008 by UN) when circulation is understood as an industry which includes wholesale and retail trades. Later, the rapid development of the transportation department which undertakes the physical movement of products gave birth to logistics, an independent industry included in the circulation industry. Since the 1990s, with the more significant effect of the circulation industry on the national economy, the definition of this industry has gone much further than the traditional circulation within domestic trade and has become an industry which covers not only the circulation of agriculture products, manufactured consumer goods and means of production, but also the circulation of some producer and consumer services. The rapid development of communication technology and network platforms, as well as the changing circulation pattern, is calling for great changes in circulation statistics. The current statistical systems and methods in the circulation industry are failing to meet the requirements of new circumstances. Therefore, there is urgent need for adjustment and improvement of the current statistical systems and the setting of indicators so as to better serve the economy.

This paper redefines circulation and the scope of business covered in the statistics of circulation from the angle of large-scale, or “large circulation”, and proposes that circulation refers to the flowing process of goods and material production between suppliers and demanders. This flowing process covers the whole chain from the purchasing links to production links (for means of production) and from places of origin to sales areas. According to the statistical systems and the concept of big circulation, the statistics of the circulation industry cover the following businesses: wholesale trade, retail trade, catering industry, lodging industry, part service industries (hair dressing, beauty and health care, photography and printing, etc.), transportation industry, warehousing industry, as well as sales and transport regarding agriculture, forestry, husbandry, and fishery industries.

2. Current statistical systems of circulation and setting of indicators

Current statistical systems of circulation in domestic trade originate from the period of planned economy, and have been continued and gradually formed a statistical index system complying with the economic development scale in China. Along with the rise and development of the circulation industry in the national economy, the state attaches more and more importance to statistical work regarding circulation which has been undertaken by the National Bureau of Statistics (NBS) with assistance from government departments and industry associations, and has formed a relatively complete statistical index system of circulation.

2.1. The structure of the current statistical regime: “one main body and two wings”

“One main body” is a hierarchical management system in which NBS carries out overall management and aggregation, local departments of statistics do the statistical work, and grass-root units such as enterprises and institutions report statistics. The statistics of the “one main body” mainly reflect the conditions of national economy and social development, as well as the basic situation of component organs.

“Two wings” refers to the transversal system composed of the two major types of statistical investigation agencies: local government departments and industry associations. The statistical investigation of “two wings” is targeted at a certain sub-industry or a partial issue in circulation. The management, examination, and approval, as well as filing of the statistical system are controlled by the NBS according to the law. The “two wings” carry out different statistical investigative functions according to their fields in charge, which are a necessary and helpful supplement to the overall statistical analysis of the national economy and play an important role in current statistical systems.

2.2. The classification of current statistical systems

In current statistical systems, the statistical investigations are organized mainly in four types: periodical statement, general survey, sampling survey, and key-point investigation. Periodical statements, being the most important form of investigation in the current statistical system of circulation, is delivered from the bottom level to the top level according to unified regulations, forms, indexes, and due dates. Therefore, it is unified, timely, and reliable. Regulations concerning monthly and annual statements take up over 60% of current statistical systems of circulation. General surveys are an overall investigation targeted at the economic aggregate in the circulation domain. So it involves many indicators, covers a wide range of data, and reflects the whole picture. A sampling survey is a way of investigation which takes a sample at random from the total and gets results through inference. Key-point survey is not a full-scale investigation, but it saves time and labor and is able to provide basic information.

2.3. The frame of current statistical systems

The frame of current statistical systems of circulation can be categorized in two dimensions: firstly, the content of statistical systems; and secondly, the execution units of the statistical regime mentioned above.

2.3.1. Categories based on the content of the statistical systems

Worldwide, current statistical systems and index system of circulation in China are

comparatively complete in both content and scale. According to the relevance to the circulation industry, statistical systems and indexes related to circulation cover four parts: first, statistical systems and indexes related to circulation in the System of National Accounting; second, specific statistical systems and indexes regarding the circulation industry, which covers wholesale, retail, means of production, crucial commodities, agricultural products, and so on; third, statistical systems and indicators in logistics related to circulation; fourth, statistical systems and indicators in the lodging industry, catering industry, and service industry.

At present, there are 84 statistical systems regarding circulation in China. Monthly, quarterly and annual statements are the main forms of statistical statement; besides, there are daily reports, ten-day reports, monthly reports in February, May, August, and November, semiannual reports, and general surveys. Among all the statements there are 54 monthly reports, 22 quarterly reports, and 57 annual reports.

2.3.2. Categories based on execution units

Viewed from the distribution of statistical systems among various departments (as shown in Figure 1), NBS plays the leading role with 23 statistical systems; Ministry of Commerce, 12; other departments, 23; and 26 for various industry associations.

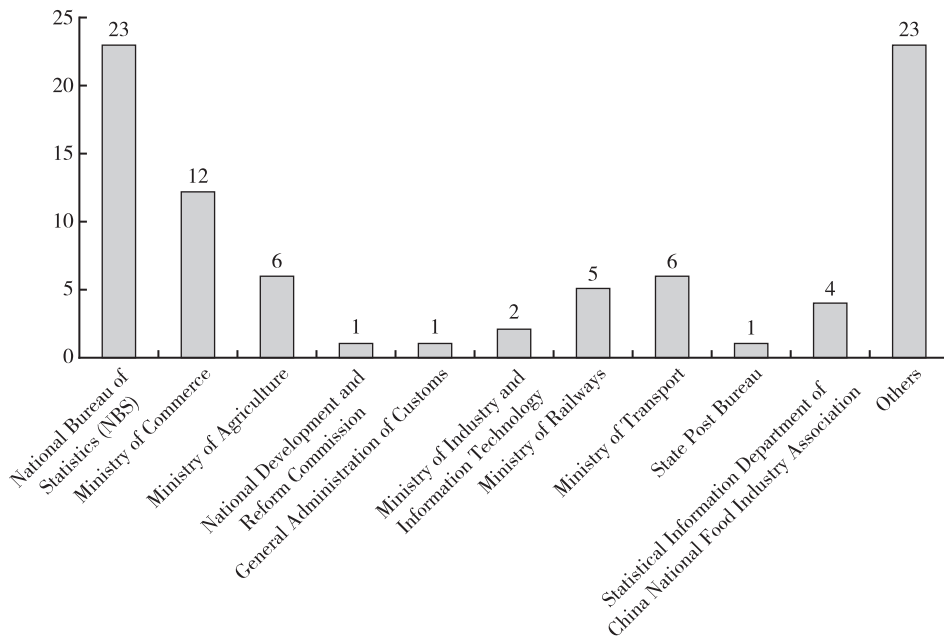


Figure 1. Distribution of current statistical systems in different departments

2.3.2.1. The major statistical system reflects the entire structure of the circulation statistics in domestic trade

National Bureau of Statistics (NBS) is the main execution unit of statistical systems in China, which according to the *Law of Statistics of the People's Republic of China* conducts statistical surveys and releases information. The statistics released by NBS quantitatively reflect the conditions of the national economy and social development. Related statistical systems are revised every two years based on the changing situations.

Domestic trade in the current statistical systems can be categorized into two parts: the first (11 items) shows the overall state of circulation in domestic trade, taking up 47.8% of the total statistical systems from the NBS; the second (12 items) reflects the structure of circulation in domestic trade, accounting for 52.2%.

The following statistical systems reflect the overall state of circulation in domestic trade: *Integrated Business Enterprise Survey System* is a statement which all grass-root statistical investigation units including the basic units of the circulation industry must fill and it shows the nature, employees and financial conditions of the unit; *Statistical Statement for System of National Accounts* reflects the overall scale, total output, and final consumption of the circulation industry in domestic trade; *Statistical Statement of Investment in the Fixed Assets* shows the investment of the circulation industry and its future potential for development; *Statistical Statement of Labor and Wages* mirrors the employment status and pay level of workers in the circulation field; *Investigation Form of Urban Residents* and *Investigation Form of Rural Residents* reflect the family status and consuming capacity of urban and rural residents.

The following statistical systems reflect the structure of circulation in domestic trade: statistical systems which show the basic situations of enterprises, such as regional distribution, patterns of ownership and shareholding, including the *Statement of Basic Situations of Distributive Industry*, a statistical system that reflects the operating conditions of wholesale and retail enterprises above a designated size and the sales of special commodities (25 big types and 14 small subtypes), like the *Statistical Statement of Wholesaling and Retailing Enterprises above Designated Size*, *Financial Statistics of Wholesaling and Retailing Enterprises above Designated Size*, a statistical system showing the economic conditions of wholesale and retail enterprises above a designated size such as assets, liabilities, and gains and losses; statistical systems which reflect the operating conditions of different types of operations in circulation, such as the *Statistical Statement of Wholesale and Retail Industries*, *Statistical Statement of Lodging and Catering Industries*, *Statistical Statement of Transportation, Post, and Telecommunication*, and *Statistics of Commodity Trading Markets with Over One Hundred Million Trading Volume*; statistical system which show the operating conditions of enterprises at various sizes, like the *Statistical Statement of Small and Micro Businesses in Service Industry*.

2.3.2.2. The “two wings” focus on special statistics

The first wing of the “two wings” is various government departments. Government departments conduct statistical investigations regarding circulation in domestic trade according to their functions designated by the State Council. There are 33 statistical systems in this dimension, taking up 40% of the current circulation statistical systems. These systems can be divided into two types according to their numbers.

The first type is the statistical systems of departments like the National Development and Reform Commission, the Ministry of Commerce, and the Ministry of Industry and Information Technology (MIIT) which concern industry categories and commodity varieties.

There are two such statistical systems in the Ministry of Industry and Information Technology, one in the National Development and Reform Commission, and the General Administration of Customs, State Post Bureau, and State Grain Administration, respectively. *The Statistical Accounting and Statement of External Logistics* of the National Development and Reform Commission, *Statistical Statement of Pharmaceuticals Industry* of MIIT and *Statistical Statement of Postal Industry* of the Ministry of Post and Telecommunications are all industry statistics. *The Regulations Regarding Customs Statistics of PRC* and *the Statistical Statement of MCCs of MIIT* belong to statistical monitoring of commodity varieties.

Statistics of key commodities take up nearly 80% of the current statistical systems of the Ministry of Commerce. The major systems are as follows: *Statistical Statements of the Market Monitoring of Key Means of Production*, *Statistical Statements of the Use, Supply and Key Equipment of Bulk Cement*, *Statistical Statement of the Market Monitoring of the Cocoon Silk Industry*, *Statistical Statement of Alcohol Circulation Industry* as well as *Statistical Statement of the Import of Staple Farm Products*.

The second type is the statistical systems of the Ministry of Transport, Ministry of Railways, and Ministry of Agriculture, which are obvious industry statistics.

There are 6 such statistical systems in both the Ministry of Transport and the Ministry of Agriculture, and 5 in the Ministry of Railways. Such systems monitor the basic conditions, production capacity, and operation ability of investigated units, investment, profit, cost, prices, equipment, and energy consumption. The following are some examples: *The Comprehensive Statistical Statement of Agriculture* and *The Comprehensive Statistical Statement of Agricultural Reclamation* reflect the basic conditions of the investigated units; *The Comprehensive Statistical Statement of Transport*, *Statistical Statement of Domestic Shipping*, *Statistical Statement of Water Transport*, *Statistical Statement of Ports*, *Statistical Statement of Railway Freightage*, *Statistical Statement of Luggage and Package Transport by Railway*, and *Statistical Statement of Township Enterprises* show the range of production as well as the operation ability of the investigated units; *Statistical Statement of the Costs of Agricultural Commodities* and *Statistical Statement of Township Enterprises* mirror the costs and profits; *Statistical Statement of Investment in Transportation Fixed Assets*, and *Statistical Statement of Investment in Railway Fixed Assets*

show the statistics concerning investments; *Statistical Statements of the Prices of Major Agricultural Products and Means of Production* reflect the prices; *The Comprehensive Statistical Statement of Transport*, and *Statistical Statement of Railway Transport Equipment* reflect the situation of investigated equipment; *Statistics of Energy Consumption and Conservation in Railway Transport*, and *Statistics of Energy Consumption in Transport* show the energy consumption of investigated industries.

2.3.2.3. The other “wing” is the organizations represented by industry associations

Such organizations conduct statistical investigations targeted at specific industries on the basis of their members. Some of the statistical investigations serve as supplements to the current national statistical investigations; more importantly, they fill the vacancies in national statistical investigations, such as the jointly-conducted statistical investigation by the National Development and Reform Commission, NBS, and CFLP—*The Statistical Accounting and Statement of Social Logistics*. Other statistical statements reflect the national economy and people’s livelihood, such as *Statistical Statement of national Grain Circulation*, *Statistical Statement of State Grain Reserves*, *Statistical Statement of the Sales of Meat, Egg and Their By-products*, and *Statistical Statement of Salt Industry*. There are still other statistical statements which reflect the key fields of the national economy and people’s livelihood, such as *Statistical Statement of the Management of Food and Drug*, *Statistics of the Data Acquisition System of Tobacco Industry* and *Statistical Statements of Production and Operation Enterprises of Explosives for Civil uses*. There are 26 Statistical investigations conducted by organizations represented by CFLP, taking up 31.7% of the total current statistical systems of circulation.

3. The existing problems of the current statistical systems and the setting of indicators of circulation in domestic trade

Current statistical systems of circulation in domestic trade derive from the planned economy, therefore, the scope of statistics and the setting of indicators do not match the development of the circulation industry in the market economy and fail to reflect and demonstrate the running conditions. Moreover, the management systems lack smooth links among each other and integration and there exist repeat statistics. Therefore, current statistical systems of circulation cannot meet the need of development of the circulation industry. These problems are demonstrated in the following aspects.

3.1. Unclear structure of the statistical regime

The current structure of China’s circulation’s statistical regime includes specific government statistical organs, functional departments and various industry associations which crossover and

overlap with each other. In government statistics, departments like the Ministry of Commerce, the Ministry of Agriculture, the Ministry of Transport, and the State Administration of Industry and Commerce (SAIC) set up independent statistical systems according to their varied functions. Therefore, due to the lack of coordination between functional departments there is severe segmentation and unclear structure in the statistical systems of circulation, and the setting of indicators of the system lacks authority and integrity.

3.1.1. Lack of coordination among the statistical organs

Due to the lack of coordination, statistical statements on the same object but with different focus have no specific leading units. In other words, no department is specifically in charge of overall management. Various functional departments and industry associations set up independent statistical systems to meet their own needs.

Besides NBS, government statistics also include departments like National Development and Reform Commission, the Ministry of Commerce, the Ministry of Agriculture, the Ministry of Transport, General Administration of Customs, and the SAIC. In general, the statistical systems of NBS lay stress on overall economic operation, have broad coverage, and well reflect the conditions of the circulation industry. Meanwhile, however, these systems have relatively few, and only macroscopic, indices. Statistics of the National Development and Reform Commission, the Ministry of Commerce, the Ministry of Agriculture focus on the statistics of typical enterprises and the reflection of the running characteristics of the circulation industry. With a smaller scope of examples and richer setting of indicators, statistics of functional departments can reflect more timely the development and variation trend of the circulation industry.

Regarding the aspect of industry associations, besides the China General Chamber of Commerce, the China Federation of Logistics and Purchasing, the Chinese Chain-store and Franchise Association and Chinese Agro-produce Marketing Association, there are many intermediary organizations regarding specific industries, such as the China Association of Agricultural Machinery Distribution, China Tea Marketing Association, China Association of Metallic Materials Circulation, China Association of Subsidiary Food Distribution, Chinese Building Material Circulation Association, China Association of Alcohol Circulation, and China Fruit Marketing Association.

3.1.2. Multi-category statistical statements overlap with each other in content and lead to dispersed data

Due to the lack of overall management, various functional departments and industry associations set up independent statistical systems, leading to overlaps in content and redundant data, and bringing tremendous pressure on grass-root enterprises.

The statistics of the circulation of means of production are obtained by the Department

of Market Operation and Consumption Promotion of the Ministry of Commerce (*Statistical Statement of Market Monitoring of Key Means of Production*) and the China Logistics Information Center (*Statistical Statement of the Circulation of Means of Production*) respectively. It can be seen from the name and setting of indicators that the two statements have different focuses, but they overlap with each other in terms of sales, stock, and other parts.

The statistics of building materials are obtained by the Department of Circulation Development of the Ministry of Commerce (*Statistical Statement of the Use, Supply and Key Equipment of Bulk Cement*) and the Information Department of the China Building Materials Federation and the Economic Supervision Society of Chinese Building Materials (*Statistical Statement of Building Materials*), and there are overlaps and crossovers between the two statements.

The statistics of the commercial service industry are provided by the Department of Circulation Development of the Ministry of Commerce (*Statistical Statement of Typical Enterprises in Commercial Service Industry*) and the Division of Trade Statistics of the NBS (*Statistical Statement of the Basic Units of Commercial Service Industry*). The two statements crossover and overlap with each other in terms of the number of employees and economic indicators.

The statistics of the key enterprises of circulation are done by the Department of Market Operation Consumption Promotion of the Ministry of Commerce (*Statistical Statement of the Key Enterprises of Circulation*), the Division of Trade Statistics of the NBS (*Statistical Statement of Wholesaling and Retailing Enterprises Above Designated Size*), and China General Chamber of Commerce (*Statistical Statements of Key Enterprises and of the Commerce of Key Areas*). The three statements overlap with each other in several indicators like revenue, profit, and tax. An especially high proportion of overlap exists between the *Statistical Statement of the Key Enterprises Circulation* and *Statistical Statements of Key Enterprises and of the Commerce of Key Areas*.

In specific statistics, the *Statistical Statement of Market Monitoring of Necessities of Life in Urban Areas* of the Department of Market Operation and Consumption Promotion of the Ministry of Commerce and the *Statistical Statement of the Prices of Major Agricultural Goods and Materials for Agricultural Production* of the Information Division of Market and Economy of the Ministry of Agriculture crossover with each other in the statistical setting of indicators.

Because many departments and organizations conduct statistical survey, the data are dispersed and fail to reflect the overall picture of the circulation industry. Besides NBS, the issuers of the statistics, such as departments and their affiliated institutes, the General Post Office, the State Administration of Industry and Commerce, China Federation of Logistics and Purchasing, China General Chamber of Commerce, Chinese Chain-store and Franchise Association, as well as large circulation enterprises issue statistics related to consumption and circulation according to their management and spheres of business. Moreover, research institutes also release data analysis reports. Therefore, with statistics from various channels, users are at loose ends about the data.

3.1.3. Incomplete statistics for some industries and circulation links and uncovered fields

Although current circulation statistics regime is full fledged, it has its root in the planned economy and the multi-leader model of management does not match the development of industries. What's more, the current statistical regime fails to reflect some newly emerging types of business.

3.1.3.1. Incomplete statistical system of e-commerce

In recent years, there has been rapid development in e-commerce. Since 2011, the Ministry of Commerce has started to set up statistical statements for e-commerce in commercial and trade circulation fields. In the statistics of e-commerce enterprises, investigations are conducted in some typical e-commerce enterprises through the *Annual Statistical Statement of the Operation of Typical E-commerce Enterprises*. In the statistics of NBS, two statements are related to e-commerce—*Sheets of Informatization* and *Monthly Report of Sales and Sotck (for Individual Business Operators) of Wholesale and Retail Trade*. There are two major problems with the statistics of e-commerce. Firstly, the statistical investigations are conducted at a relatively small scope—among enterprises above designated sizes in the manufacturing industry, construction industry, wholesaling and retailing industry, lodging and catering industries, real estate development industry, and key service industries.¹ Small and micro e-commerce businesses are not included in the investigation. The research of the Ministry of Commerce shows that small and micro businesses are very active in e-commerce. They are large in number, diverse in type of operations, fast in development and vibrant, some of them growing into the new engines for the development of e-commerce or creating new fields in e-commerce. Therefore, government and management departments should get acquainted with and study the development of small and micro businesses. Secondly, the “Sheet of Informatization” of NBS is an annual report which cannot demonstrate the latest development data of such a rapidly growing industry. Thus, the report is unable to reflect the conditions and characteristics of e-commerce.

¹ ① Enterprises above designated sizes in (manufacturing) industry are legal entities with annual primary operating revenue more than 20 million yuan.

② Qualified construction enterprises are legal entities qualified for general contracting, specialized contracting and labor sub-contracting.

③ Enterprises above designated sizes in wholesaling and retailing industries are legal entities with annual primary operating revenue over 20 million yuan in wholesaling business and over 5 million yuan in retailing business.

④ Enterprises above designated sizes in lodging and catering industries are legal entities with annual primary operating revenue more than 2 million yuan.

⑤ Enterprises in real estate development industry refer to all the legal entities in real estate development industry.

⑥ Enterprises in key service industries are legal entities above designated sizes in service industries which include transportation, storage and postal service, information transmission, software and information technology, leasing and commercial services, scientific research and technology, water conservancy, environment and public facilities management, neighborhood services, repair and other services, education, healthcare and social work, culture, sports and recreation, property management and real estate intermediary service, etc.

Along with the rapid development of e-commerce, the current statistical system and the setting of indicators are not able to meet the needs of government departments and social development. The statistical system is in urgent need of improvement.

3.1.3.2. The statistical system of the consumer services needs to be strengthened

The statistical investigations of NBS are targeted at the enterprises above a designated size level in the lodging and catering industries based on turnover, number of employees, business area, tax amount, and profit. There is no specific investigation in hairdressing and beauty, toiletry industries, laundry and dyeing, home appliance repair, photography, and recycling industries. In the *China Statistical Yearbook(2012)*, the statistics were dominated by data of “social services” such as community services. There is probably some crossover between the statistics of “service networks for the convenience and benefit of the people” and the concept of the circulation industry.

The Department of Trade in Services and the Department of Circulation Development of the Ministry of Commerce conduct statistical investigations among typical enterprises in the above consumer industries. The indicators are mainly the overall scale, industrial structure, overall benefits and contribution as well as level of modernization, etc. However, the statistics lay too much stress on the key enterprises and it is hard to reflect the whole situation of the industries. Therefore, the structure of the sample needs to be improved.

3.1.3.3. The integration of circulation has not been achieved yet

Viewing from the development course of the circulation industry in developed countries, the development trend of the circulation industry will be the integration of circulation. In other words, the traditional circulation trade should extend towards two ends and fulfill integrated supply chain management from purchasing, production, processing, distribution, storage, to marketing, and after-sale service. Integrated supply chain management is the advanced development stage of circulation, and presently we are at the beginning stage of the transformation from a traditional trade pattern and systems to integrated supply chain management. There remain many realistic problems to be solved to achieve integrated supply chain management, such as the currently rigid system limits, industrial monopoly, and intrinsic thinking mode of enterprises about operations. The indicators geared at integrated supply chain management in the current circulation statistical systems are still in short.

3.1.3.4. Unmonitored supply-chain finance

As a new way of financing small and medium-sized enterprises, supply-chain finance not only makes up for insufficient working capital from loans for enterprises but also reduces the need for

working capital through the introduction of financing from upstream and downstream enterprises. Thus, in the process of putting together a logistics chain, information chain, and capital chain, enterprises acquire a value-adding chain. Therefore, attention should be paid to this aspect in the statistics of circulation.

3.1.3.5. Going green and environmental protection need more attention

The circulation of second-hand goods makes up an important part of circulation in domestic trade, and is a key link in the development of the recycling economy and low-carbon society. As early as the December, 2011, the Ministry of Commerce issued the *Instruction Concerning Promoting the Development of the Second-hand Goods Industry in the Twelfth Five-year (hereafter Instruction)*. The *Instruction* put forward the construction of a green and environmentally-friendly system for the circulation of second-hand goods by 2015, and eight tasks for the development of second-hand goods industry as well as some supporting measures. The purpose of this *Instruction* is to better promote the circulation of second-hand goods in order to go green, to advance consumption upgrades, and to encourage industrial development. For instance, China, as a country with huge investments in fixed assets, has a large stock of various machinery. The market size of second-hand equipment has hit a value in billions. Therefore, the circulation of second-hand equipment should be monitored in circulation statistics.

3.2. The setting of indicators of the statistical systems is not standardized

3.2.1. The setting of indicators is simple and not systematic enough

Among all the indicators of the current statistical systems of circulation in domestic trade, the retail sales of social consumer goods is the only index widely accepted by all sectors of society. Others are mostly laid up on the shelves, and comprehensive and representative indexes are in short. Some hot issues which draw great attention from the general public and information regarding the market are not yet reflected.

3.2.2. Some indexes are incomplete

3.2.2.1. Statistics concerning the circulation of means of production are in short

The circulation of means of production makes up a significant part of the circulation industry. The purchasing of means of production is in the scope of a large circulation system, but it is not covered yet in the current statistical systems of circulation, which causes inaccuracy in measuring the contribution of the circulation industry to the national economy.

3.2.2.2. The setting of indicators of the statistical system regarding logistics is not complete

Statistics of logistics are conducted from the aspects of transport, storage, and postal service (including express delivery), and the main indexes are freight volume and business volume. It is hard to identify industrial logistics and business logistics from such statistics. In other words, these indexes can only be interpreted with logistics being an integral part of the circulation industry. No further analyses can be done regarding the purposes of logistics, and therefore, it is hard to know the percentage of the cost of logistics in various types of business operations.

3.2.3. The disagreement of statistical caliber and the redundant kinds of indexes lead to inconveniency in data processing

Due to the limits of functions and various focuses of departments, statistical statements are designed to meet independent needs, and there is no universal “statistics of large circulation” in data processing. The major problem is that the statistics of NBS are targeted at enterprises above designated sizes and mainly reflect the fundamentals of the circulation. They cover a wide scope, but only involve the fields of circulation in the narrow sense, such as wholesale and retail trade. The statistics of departments are mostly key-point investigations, focusing on the depth of circulation. Despite the limited investigation of enterprises, the statistics of departments can timely and keenly reflect the changes in the circulation industry. Thus, there is no unified statistical system despite a large amount of indexes. Moreover, the disagreement of the statistical caliber of indexes causes low availability of data.

3.2.4. There are too many incremental indicators and too few structural indicators

In the current statistical statements of circulation, most statistical indicators reflect the increment of scale, output, consumption, stock, income, cost, and profit, as well as information about investigated units, employees, stores and equipments. Very few indicators reflect structures. For instance, in the statistics of government departments and organizations, only categories of goods and range of goods are structure indicators in the statistics of sales volume, and there are few indicators which concern distribution in different types of operations and the proportion of new businesses.

3.2.5. The statistics are mostly raw data with insufficient processing and analyses

At present, most statistics available to the general public are raw data which are directly released after simple aggregation. Very few data are processed and analyzed, which leads to low availability and practicality of the data. For example, the *Statistical Statement of Wholesale and Retail Trade* and the *Statistical Statement of Lodging and Catering Industries* are targeted

at the basic situations, operational, and financial conditions of enterprises and units above the designated sizes in wholesale, retail, lodging, and catering industries. The statistics are generally about the number of legal entities and employees, sales volume, purchasing volume, stock, import and export volume, assets and liabilities, turnover, costs and profits, as well as aggregation of raw data about chain operation and the above-hundreds-of-millions trading market. The processed data are merely restricted to the contribution of the tertiary industry towards the national economy.

3.2.6. The publicized statistical information is rare

Taking again the *Statistical Statement of Wholesale and Retail Trade* and the *Statistical Statement of Lodging and Catering Industries* for example, among the monthly issued statistics, those which concern the service industries are mainly investment in fixed assets, retail volume of social consumption goods, changes in CPI, and changes in prices of major foods in 50 cities; information about the added value of the wholesale and retail businesses and lodging and catering industries can be obtained in quarterly issued statistics; and detailed aggregation of raw data regarding the situation of units above a designated size in wholesale and retail trade and in lodging and catering industries, operational and financial conditions of enterprises, as well as regional added value, ownership, and regional financial status are available, but only in *China Statistical Yearbook* and the *Third Industry Yearbook*. Therefore, published statistical information on circulation in domestic trade is lacking and often dated.

4. Suggestions on improving the statistical systems and the setting of indicators of the circulation in domestic trade

According to the *Suggestions on Deepening the Structural Reform of Circulation and Accelerating the Development of the Circulation Industry*, a nationally unified scientific statistical system of circulation and information-sharing mechanisms should be constructed. In doing so, we should improve the working level and quality of the statistics, strengthen the development and application of statistics in key fields of circulation such as retailing, e-commerce, resident services, and distribution of means of production, and enhance the ability of serving macroeconomic regulations and enterprise development. After inspecting current statistical systems of circulation in domestic trade, the author suggests that we should take “perseverance,” “construction,” “integration,” and “innovation” as the working mentality, take the statistical methods of big data and gradually improve the statistical system of circulation in domestic trade by following the principle of “from the easy to the hard, from the near to the distant,” so that the statistical system can meet the needs of the expansion of the circulation industry both upstream and downstream, meet the needs of the Ministry of Commerce to manage the industry, promote the development of circulation industry toward platformization, and meet the needs of system

reform of the circulation industry, as well as the reform of government departments and industry associations. The ultimate goal is to measure and calculate the aggregate of goods circulation based on the sales volume of means of production and the retail sales of consumption goods, to develop new ways of statistical investigation meeting the needs of the era of big data, and form a system of periodical general survey of large circulation.

4.1. To build a mechanism of coordination, and to unify the work of the organizations involving statistics of circulation

With the inter-ministerial joint conference of modern circulation as the link, we should further improve the statistical organization, investigation, and management of the multi-level system of “one main body and two wings,” strengthen coordination, break the segmentation, unleash the advantages of all parties, build an integrated and coordinated information-sharing mechanism with statistics of NBS and government departments as the basis and statistics of industry associations as assistance, and maximize the value of the statistical data of circulation.

The dominant organ of statistics of circulation should be established to carry out overall management concerning the content and methods of statistical analysis, as well as the channels of data collection, and meanwhile to integrate the publicized data so as to avoid inconsistency of information from different departments. A key point is that the statistical investigations should cover the entire circulation industry with well-arranged content and frequency, and reduce crossover and overlap. As for the currently redundant statements and indices, this paper suggests that government departments and industry associations should share the workload and cooperate with each other by setting up a unified index system and jointly conduct investigations and issue statistics. Government departments should take the lead, provide financial support, and conduct management, while the industry associations can conduct practical investigations, put their expertise into full play, and ensure the consistency of statistics.

Specifically, there are a number of suggestions.

1. At present, the statistical investigations of the circulation of means of production are conducted by the Ministry of Commerce (*The Statistical Statement of Market Monitoring of Key Means of Production*) and China Logistics Information Center (*The Statistical Statement of Means of Production*). It is suggested that a statistical structure should be built in which the Ministry of Commerce takes the lead and provides financial support, the two organs cooperate and jointly organize statistical works, and China's Logistics Information Center conducts concrete investigative works.

2. As for the statistical work of the commerce and trade service industries, it is suggested that the National Bureau of Statistics enlarges the scope of investigations in enterprises of this industry based on the current statistical system, as well as the needs of the management of the Ministry of Commerce. Moreover, other investigations should be separately arranged for those uncovered fields in this industry so as to demonstrate the comprehensiveness, expertise, and

continuity of the statistics of circulation.

3. In the statistical works of key enterprises of circulation, there are the *Statistical Statement of Wholesaling and Retailing Enterprises above Designated Size* of NBS, the *Statistical Statement of the Key Enterprises of Circulation* of the Department of Market Operation and Consumption Promotion of the Ministry of Commerce and the *Statistical Statements of Key Enterprises and of the Commerce of Key Areas* of China General Chamber of Commerce. It is suggested that the indexes are set jointly by the Ministry of Commerce and NBS, and China General Chamber of Commerce conducts the concrete work.

4. In the statistical works of the circulation of agricultural goods, there are the *Statistical Statement of Prices of Major Agricultural Goods and Materials for Agricultural Production* of the Ministry of Agriculture and the *Statistical Statement of Market Monitoring of Necessities of Life in Urban Areas* of the Ministry of Commerce. It is suggested that the two departments work together to set indexes based on the current statistical statements, while the Ministry of Agriculture conducts concrete works.

5. In the statistical works of the circulation of building materials, there are the *Statistical Statement of the Use, Supply, and Key Equipment of Bulk Cement* of the Ministry of Commerce and the *Statistical Statement of Building Materials* of China Building Materials Federation. It is suggested that the Ministry of Commerce takes the lead and sets indexes jointly with China Building Materials Federation, and the latter conducts the concrete works.

6. In the statistical works of the circulation of alcohol, there are the *Statistical Statement of Information Monitoring of Alcohol Industry* of the Ministry of Commerce and the *Statistical Statement of Chinese Rice Wine* of China Food Industry Association. It is suggested that the Ministry of Commerce takes the lead and sets indexes jointly with the China Food Industry Association, and the latter conducts the practical works.

7. In the statistics of logistics industry, it is suggested that the National Development and Reform Commission sets the indexes and China Logistics Information Center is the executive unit.

8. In the statistical works of consumer services, it is suggested that the Ministry of Commerce sets the indexes and corresponding industry associations are the executive units.

9. In the statistical works of e-commerce, it is suggested that NBS and the Ministry of Commerce set indexes together, and the former conducts the concrete works.

4.2. To improve current statistical setting of indicators in circulation so as to meet the needs of extension of the circulation industry towards upstream and downstream industries

To meet the needs of extension of circulation towards upstream and downstream industries and to break new ground for statistical systems and the setting of indicators, the author holds that we should integrate existing resources on the basis of current materials, unify typical investigations, key investigations and investigations of units above designated sizes, and

construct a statistical system which reflects the combination of complete circulation and services. We should take the “large circulation” as statistical object, and include the purchasing and sales of means of production, transport and sales of agricultural goods, consumer services, e-commerce, supply-chain finance, logistics as well as the recycling industries of green economy into the scope of statistical investigations. In the meantime, it is suggested to increase statistical indexes concerning wholesale and retail industries so as to make the current statistical setting of indicators complete and more systematic. With the above measures we can expect to gradually achieve the transformation of increment indexes to structural indexes and overlapping indexes to concise indexes, and to improve the index system by filling the blanks in the system. First, the transformation of incremental indexes to structural indexes is necessary. For instance, in order to reflect new business and development in e-commerce, it is suggested to add some structural indexes such as “sales of e-commerce,” “sales of new goods,” and “cross-regional sales” to the index system of the sales of the circulation industry. Another instance is to add “enterprise information investment” to the index of enterprise investment in fixed assets. Second, the transformation of overlapping indexes to concise indexes will improve general efficiency in analysis. In the current statistical systems of circulation, there are climate indexes which can give rapid reflection of the change in circulation industry. Therefore, in order to avoid overlapping, it is not suggested to set forth new climate indexes. The Ministry of Commerce can cooperate with the China Federation of Logistics and Purchasing to improve the climate indexes on the basis of the current “wholesale and retail businesses” of the non-manufacturing purchasing managers’ indexes. Third, blank fillings in the index system. In the current statistical systems of circulation, the new businesses, new type of operation, and new patterns in e-commerce, online transactions, integrative mode of circulation, and multimodal transport and shipment are not covered. Therefore, supplementation should be made in such areas while improving current statistical systems of circulation.

4.2.1. To improve the statistical system of consumer services

The statistical indexes of consumer services should be considered from two aspects: common indexes and unique indexes. Common indexes are shared indexes by enterprises which can be obtained from current periodical statements. They can reflect the overall level of the industry by aggregation; on the other hand, common indexes are set for the needs of the measurement of regional GDP. There are four major categories: first, the indexes of the conditions of enterprises which reflect the basic parameters of enterprises, such as unit code, business address, type of business by registration, date of establishment, operating status, industry code, key business activities, and share holding; second, indexes of assets and liabilities which show the scale of the enterprise, such as total assets, original value of fixed assets, and the depreciation of fixed assets; third, indexes of operation which reflect the economic efficiency, profitability, risk resistance, and long-term solvency of an enterprise, such as operating revenue, prime operating revenue,

prime operating costs, taxes and associated charge, fees and charges, operating profits, and total profits; fourth, indexes of human resources which reflect the employment of an enterprise, such as number of employees and labor remuneration. Unique indexes reflect the business characteristics of enterprises. Thus, they can be set in accordance with the characteristics of various industries.

When conditions permit, evaluative indexes are recommended, which cannot just reflect the hierarchical comparison of consumer services within a certain region, but instead offer a horizontal comparison among different regions. Relative numbers should be used in setting evaluative indicators, such as “input,” “output,” and “talent.” Proper indexes should be set to form an evaluative index system.

4.2.2. To improve the statistical system of e-commerce

Based on the operational characteristics of e-commerce enterprises in China, the Ministry of Commerce and related research institutes classify e-commerce enterprises into e-commerce service enterprises and enterprises doing electronic businesses. Moreover, e-commerce service enterprises are divided as e-commerce platform service enterprises and e-commerce supportive service enterprises according to the services they provide. As the operation of e-commerce enterprises counts on logistics enterprises, credit payment enterprises, as well as other related service enterprises, in order to reflect the overall conditions of e-commerce enterprises, it is suggested to create a joint statistical system for all enterprises composing the operation chain of e-commerce which reports the conditions of service enterprises, logistics enterprises, credit payment enterprises, as well as e-commerce service enterprises.

Based on the present situation of the industry, we can proceed from the statistics of core enterprises of e-commerce in order to improve the whole statistical system of e-commerce. The core enterprises are firstly enterprises that do electronic businesses in wholesale and retail industries, as well as lodging and catering industries; and secondly e-commerce platform service enterprises which include self-run trading platforms, third-party trading platforms, mixed trading platforms, as well as enterprises of extended services such as third party enterprises, buying guide websites, data mining enterprises, and auxiliary marketing enterprises. Presently, it is necessary to optimize the *Annual Report of the Operation Conditions of Typical E-commerce Service Enterprises* of the Ministry of Commerce, and form a practical statistical report which can meet the needs of management of the Ministry of Commerce and can support the policy making of the country concerning the development of e-commerce.

4.2.3. Based on international experience, to add indexes in the statistics of wholesale and retail industries

Drawing on international experience, we can add some indexes in the statistics of wholesaling

and retailing industries, such as “per capita production value,” “the added value of employees per capita,” “turnover per capita,” “proportion indexes” (the proportion of added value in the total added value, the proportion of sales of e-commerce in the total turnover), and “additional indexes” (e. g. number of fixed market stalls).

4.2.4. To improve the statistical systems of supply chain management, green economy, and platform economy

To meet the needs of urbanization, the author suggests building a statistical system for commercial and trade logistics which can reflect the varied types and tiers of cities. The system should include indexes like logistics parks, distribution centers, as well as indicators of the scope and efficiency of distribution and so on. Besides, it is suggested to form statistical systems for supply chain financial services, circular economies, and green circulation, to set indexes reflecting consumer confidence, quality safety, facilitation, and fair trade, and in the meantime to enrich and improve the climate indexes which reflect the economic cycles.

4.3. To seize the opportunity of the rapid development of big data and establish new statistical investigation methods

With the development of information and communication technologies we have entered the age of big data which benefits from the popularization and maturity of information and communication technologies. Big data offers us a new mode of thinking as we view the world—decisions are gradually made on the basis of data analyses rather than experiences and intuition. This new thinking focuses more on overall data rather than random samples, more on the complexity and relativity of data rather than the precision or cause-and-effect relationship of data.

In the age of big data there are some new features displayed by data themselves. Firstly, it is the huge amount of data. Secondly, the various data types which pose even higher requirements for data processing ability will need to be taken into account. Thirdly, the comparatively lower density of valuable data is a fact. Along with the wide application of the internet the tremendously huge amount of data brings about a lower density of valuable data. Therefore, how to get valuable data through even faster data processing is an urgent issue in the age of big data. Fourthly, the higher requirement for timeliness is the most significant feature of big data that differs from traditional data mining.

Such a development background has undoubtedly posed higher requirement for traditional statistical systems and methods. It calls for larger samples, shorter periods of pause for statistical investigations, improved statistical indexes, more accurate data, and faster data summarization, analyses, and feedbacks. An online edition of statistical statements based on the current network information technology which transforms regular statements into daily work for enterprises,

realizes real-time collection, summarization, and reflection of statistics, and solves the problems of data collection and processing in the age of big data will be the development trend for future industry statistics. In the meantime, proper development and utilization of massive data collection by the newly-emerging e-business enterprises such as Amazon, Jingdong, and Taobao will be an indispensable part of statistics for “large circulation” in the future.

4.4. To gradually improve the current statistical systems by following the principle of “from the easy to the hard and from the near to the distant”

4.4.1. To tease the relationships among the statistical organizations and integrate the current statistical systems

We should tease the current statistical systems from the angle of “large circulation”. It needs to be pointed out that to improve the current statistical systems of circulation is not to rebuild the system, but to improve and integrate them from the aspect of setting of the indicators and from the dimension of time by clarifying the responsible parties and executive parties. The author suggests that NBS, the Ministry of Commerce and other relative organs carry out studies concerning the current statistical systems of circulation, clearly define the tasks, responsibilities and goals at various levels, build a statistical regime with coordination, cooperation, and complementary elements at all dimensions, and set up a linking mechanism among departments and various industry organizations.

4.4.2. To set warning indexes on the basis of the current statistics and issue statistic yearbooks for certain industries

In the coming two years, discussions of setting warning indexes such as a business activity index for the retail industry, wholesale and trade industries, and a business climate index are suggested. The author suggests that the *Annual Yearbook of Statistics for Circulation* should be issued on the basis of current statistics, which on the one hand displays the status quo of the large circulation systems, and on the other hand lays a solid foundation for the improvement of the statistical systems regarding circulation. As for the scope and statistical setting of indicators of the annual yearbook, we can proceed from the following three aspects: taking the newly defined concept of large circulation as the basis, integrating the statistics of large-scale circulation with the current statistical statements of government departments and related industries as the original source, fully and comprehensively reflecting the development of large circulation in China with product formats as the segmentation.

4.4.3. To transform the current statistical investigative methods and establish new methods which meet the requirements of the age of big data

It is suggested that in the next three years, a network system can be built which covers the traditional statistical content, meanwhile applies information technology and fulfills many functions incapable for the traditional statistical investigation methods. This network system is able to transform the traditional simple network of reporting data to a network of daily use for enterprises, making real-time statistics filling, summarization, and reports possible. It is suggested that the Ministry of Commerce and China Federation of Logistics and Purchasing cooperate with each other and seek to build a network system with the circulation of the means of production as the pilot field, and then apply successful experience with it to other industries so as to fulfill the total transformation of the statistical investigation methods.

4.4.4. To add indexes matching the circulation statistics in domestic trade

In the next five years we should gradually add in the current statistical systems indexes which match the circulation statistics in domestic trade so as to better understand the total value of the circulation industry, reflect the overall picture of the industry, and study the development trend as well as changing rules of “large circulation”.