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**China's Experience on the Classification Standard between New and Old Industries
and Data Conversion**

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The *Industrial Classification for National Economic Activities* (CSIC, Rev.2002) was revised under the leadership of the National Bureau of Statistics of PRC and organized by the relative departments of State Council. It has been promulgated and implemented on May, 10, 2002.

In order to apply the CSIC in our business register and the conversion of historical data, NBS improved the method of correspondence between the new and old classification. For the first time, we have set up the corresponding relations between the codes of the new and old industrial classification. Some bureaus of statistics at provincial level take advantage of the software developed on the basis of this corresponding relation to convert the data of Basic Unit Database.

1. Brief introduction to the existed industrial classification in China

CSIC Rev. 2002 was revised on the basis of the classification standard in 1994 (CSIC Rev. 1994). Considering the development of social economy in China in past ten years, for our classification to be compatible to the international classification, and the corresponding product classification standard to be established in the future, CSIC Rev. 2002 has been greatly modified and adjusted, comparing with previous version in 1994.

In general, the total number of the categories in each four levels of the new classification has been increased. In detail, section has been added by 4; division has been added by 3; group has been added by 28; class has been added by 67. See following table 1:

Corresponding table for new and old structure of industry classification of national economy

GB/T 4754-2002				GB/T 4754-1994			
Section	Division	Group	Class	Section	Division	Group	Class
A Agriculture, forestry, livestock, fishery	5	18	38	A Agriculture, forestry, livestock, fishery	5	14	16
B Mining	6	15	33	B Mining and Quarrying	7	18	53
C Manufacturing	30	169	482	C Manufacturing	30	172	544
D Production and distribution of electricity, gas and water	3	7	10	D Production and supply of electricity, gas and water	3	7	10
E Construction	4	7	11	E Construction	3	8	8
F Transport, storage and post	9	24	37	F Geological Prospecting and Water Conservancy	2	8	15
G Information transmission, computer services and software	3	10	14	G Transport Storage, Post and Telecommunication	9	21	22
H Wholesale and retail trade	2	18	93	H Wholesale and retail trade, Catering Services	6	32	67
I Accommodation and catering	2	7	7	I Finance and insurance	2	8	11
J Financial intermediation	4	16	16	J Real estate	3	3	3
K Real estate	1	4	4	K Social service	9	29	36
L Leasing and business services	2	11	27	L Health, sports and social welfare	3	11	17
M Scientific research, technical service and geologic prospecting	4	19	23	M Education, culture, arts, radio, film and TV	3	18	25

N Management of water conservancy, environment and public facilities	3	8	18	N Scientific research and Polytechnic service	2	12	12		
O Services to households and other services	2	12	16	O Government agencies, Party agencies and Social organizations	4	5	5		
P Education	1	5	13	P Others	1	2	2		
Q Health, social security and social welfare	3	11	17						
R Culture, sports and entertainment	5	22	29						
S Public administration and social organization	5	12	24						
T International organizations	1	1	1						
(Total)	20	95	396	913	(Total)	16	92	368	846

In the view of specific classification categories, some categories have been added while others reduced. On the one hand, the new classification of version 2002 especially focused on the classification of service, making the section of service industry (from section E to section T) added by 4, the division added by 3, the group added by 31, the class added by 124. On the other hand, considering the difference between the industrial classification and product classification, we make the categories greatly reduced in the section Mining and Manufacture, as a result of 20 categories reduced in Mining and 62 categories in Manufacture.

The classes in the final revision, which remains no changes, reduced or cancelled, further subdivided from the original class, respectively takes up 1/3 each. Therefore, the classification of version 2002 has been greatly changed.

2. The improvement of corresponding method between the new classification and the old

2.1 Established correspondence between the new classification and the old

In view of the requirements of statistics, revision of a classification must consider the comparability to the old classification. In CSIC revision 2002, we have changed the old method of simply listing a changing process for the new categories in CSIC. Not only keep down simply listing a changing process for the each category with written explanation, but also we have paid more attention to the corresponding of the code, listing detailed corresponding code and title of the new and old classes, while considering the requirements of computer operation. Therefore, the corresponding table included in the new CSIC will be clearer, which created a foundation for the establishment of statistical classification database.

See the following table 2:

Cross-check table for new and old structure of industry classification

GB/T 4754 — 2002		GB/T 4754 — 1994		Remarks
A	Agriculture, forestry, livestock, fishery			
01	Agriculture			
011	Growing of cereal and other crops			
0111	Growing of cereal grains	0110	Planting	Newly added, subdivided from the original 0110
0112	Growing of potatoes	0110	Planting	Newly added, subdivided from the original 0110
0113	Growing of oleaginous crops	0110	Planting	Newly added, subdivided from the original 0110
0114	Growing of bean crops	0110	Planting	Newly added, subdivided from the original 0110
0115	Growing of cotton crops	0110	Planting	Newly added, subdivided from the original 0110
0116	Growing of hemp	0110	Planting	Newly added, subdivided from the original 0110
0117	Growing of sugar crops	0110	Planting	Newly added, subdivided from the original 0110
0118	Growing of tobacco crops	0110	Planting	Newly added, subdivided from the original 0110
0119	Growing of other crops	0110	Planting	Newly added, subdivided from the original 0110
012	Growing of vegetables and horticultural crops			
0121	Growing of vegetables	0110	Planting	Newly added, subdivided from the original 0110
0122	Growing of flowers	0110	Planting	Newly added, subdivided from the original 0110

2.2 The type of correspondence between the new classification and the old

By summing up, there are three types on correspondence between the new classification and the old:

- The first is no changes, namely one to one
- The second is reduced or cancelled, namely multiple to one
- The third is further subdivided from the original class, namely one to multiple

Such as “133 Processing of vegetable oils “of CSIC Rev. 2002 in Table 3 has not changed except code , so it is correspondence of one to one between the new classification and the old , but “1340 Manufacture of sugar “in Table 3 was combined from 3 classes of CSIC Rev. 1994, so it is multiple to one.

Table 3

GB/T 4754 — 2002		GB/T 4754 — 1994		Remarks
133	Processing of vegetable oils	132	Processing of vegetable oils	
1331	Manufacture of edible vegetable oil	1321	Manufacture of edible vegetable oil	
1332	Manufacture of non-edible vegetable oil	1322	Manufacture of non-edible vegetable oil	
1340	Manufacture of sugar	1331	Production of cane sugar	Combined from 3 original classes of 1331、1332、1334
		1332	Production of beet sugar	
		1334	Processed sugar	

However, the 9 classes of “011 Growing of cereal and other crops” in Table 2 is newly added, and subdivided from the original “0110 Planting”, namely one to multiple.

2.3 Software system for the classification

Meanwhile, in order to making the computer well used in the classification, and making it convenient for the adjustment of historical statistical data and inquire by users, NBS has also developed two kind of software.

One is the conversion software, developed by NBS, which can be used for the convention between the new classification and the old for the adjustment of historical data. Now the program has been send to the provincial statistical bureau.

Another is the *CSIC Inquiry System*, it includes the structure of CSIC Rev. 2002, the correspondence table between the new classification and the old, and the correspondence table between CSIC Rev. 2002 and ISIC Rev. 3. It can make users understand the difference between the new classification and the old, and find out the class immediately which a establishments should be.

3. The method and experience for conversion of data for China’s Basic Unit Database

Considering the decentralized statistics systems in China, the statistical bureaus in each province have their own Basic Units Database. Therefore, after CSIC Rev. 2002 taking effect, statistical bureaus at provincial level have adopted different methods to adjust their own Basic Units Database. The NBS has not made unified prescription on the method of adjusting the Basic Units Database.

3.1 The conversion method

Because of the different condition for statistics foundation in various provinces, the conversion method in each province for Basic Unit Database is also different. There are primarily two kinds of methods:

The first kind is to make use of the corresponding relationship between new and old industries and conversion software to adjust data.

The improvement of the new-old corresponding method makes it possible to use computer to adjust history data and hence the work efficiency has been improved.

As being introduced above, 913 industries of the 2002 version, which have not undergone changes, or deleted, or subdivided to new industry classes, respectively occupy about 1/3 of the total number. If we adjust Basic Unit data from old industry to new industry, then 376 industry

classes can (one-to-one corresponding) be directly converted, and another 388 old industry classes can be directly merged into the nearly 200 new industry classes. It means that about 2/3 of the new industry classes can be directly converted when using computerized software to adjust data. The remaining industries can be further determined respectively with the primary activities filled into questionnaire by the units.

Up to now, two censuses of establishments have been implemented In China. The census data show that the number of the corporate units in each province region is around several hundred thousand. However, the maximum number of corporate units will be more than ten thousand in county level, among which 2/3 of the industries can be automatically converted, while the remaining work for unit classifying determination can be greatly reduced and the work efficiency improve. As far as we know, most provinces have adopted this kind of data conversion method to adjust the unit database.

Another method is to add an indicator of new industry code in the 2002 basic unit survey questionnaire, namely the basic level of statistical office shall fill out the code of new and old industries respectively in accordance with the primary activities filled out by enterprises or units, this means the classifying of the all enterprises and units should be re-determined.

3.2 The compare of two conversion methods

In comparison, the two methods each have their advantages and disadvantages.

The first method that uses correspondence conversion software can apparently reduce the workload of statistics office at basic level and increase work efficiency. But the condition is that the old industrial data must be right.

The second method of re-determination of the industries involves huge workload, yet data quality collected by the second method will be relatively higher. However, the basic statisticians are required know both the new and old classification for the method of re-determination.

In conclusion, one point is important that no matter which one is used, the work for the data conversion from old classification basis to new classification basis must be done by the statistics office at basic levels for China. If the foundation is weak in the statistical agencies of county level, the conversion of the data is carried out in the provincial level. It not only conforms to the China's reality of decentralized statistical system (province has their own database) but also can effectively reduce the workload of data conversion on national level. Of course, NBS of China should improve continually the correspondence method of classification and the function of the convention software to enforce the data process ability of computer, eventually reduce the operation by hand and the workload of the statistics office at basic levels.

Comments on ISIC and CPC on 2007

About the ISIC:

In the ISIC4, we think the following should be paid more attention.

1. For the agriculture section

Under the **011 growing of non-perennial crops**, it is more detailed than the last draft. We think it is no need to classify so detailed, while we classified like this in our national version 2002. We are like to change our mind, in the next version, we intend not to classify so many classes.

2. We think some knitted and crocheted articles such as *scarf and tie* should not be placed in 1430, while it was placed in 1410 in the draft. In additional, the difference between 1410 and 1430 should be well described in explanatory notes.

1410 Manufacture of wearing apparel, except fur apparel

1420 Manufacture of articles of fur

1430 Manufacture of knitted and crocheted fabrics and articles

3. We think the title of the 2030 should be changed to Manufacture of chemical fibres, for it will be well describe the contents of this class.

2030 Manufacture of man-made fibres changed to

2030 Manufacture of chemical fibres

4. We think it is a well alternative that relative **medical equipment** should be placed together in one class. Not like the draft, separately placed in two classes, **2660 Manufacture of irradiation, electromedical and electrotherapeutic equipment** and **3250 Manufacture of medical and dental instruments and supplies; protective safety equipment**. We think it is excrescent to separate in to two classes.

6. In the sports and recreation activities, we think it is needed to add a new class **9313 the activities of the sports organization**, such activities are always carried out by the Olympic and other special sports organizations. We think the sports organizations are important in sports activities.

7. For the **3600 "Water collection, treatment and supply"** in section E, we think it is better to place into **D section "Electricity, gas, steam and air conditioning supply"**. Establishing a new section named **"environmental protection and relative activities"**, in which place the sewerage, waste management and remediation activities.

8. We think the group **45 "whole sell and the retail of motor vehicles and motorcycle"**, should broken away and placed into relative "whole sell" and "retail" classes, not as a division like the draft. We think the classification about this content in NAICS is relatively reasonable.

9. We think the **642 "activities of holding company"** should not be placed in **K "financial and insurance activities"**, it should be placed into N **"Administrative and support service**

activities”, and do not separate it into **“financial holding company” and “non- financial holding company”**.

About the CPC:

In the past, we have a product classification named "National Classification of and Codes for Main Products". This classification was been drafted by NBS of China in 1987, which only include transportable products (goods), not include services. This classification was very detailed, which had been classified for 4 levels and about 50 thousands categories of products, and had 18-digits coding.

But this classification is very detailed, and does not meet the need of the practical statistics. So we have various product lists in every statistics. But we have not a universal product classification.

After our industrial classification is finished in the year 2002, we initiated a program to develop product classification. The production was developed by the origin-of-industry. The structure of the product classification is mostly like the structure of CPA. The draft of the classification was finished and has been sent to the other statistical office to collect their contents. In the year 2005, we are revising the draft product classification according to the comments proposed by the provincial statistical office and other statistical office in central government department.

About the CPC in 2007, we insist our opinion that the CPC should be structured according to the industry basis, because this will enforce the tie between the activities and products. This kind of structure of CPC will be well used in practical statistical work. When the CPC is revising, the first thing we must consider is the practical application in statistical work.

It is a reality that EU has their CPA and PRODCOM and North American have NAICS and NAPCS themselves, not directly use CPC. In the questionnaire before, many countries proposed that CPC must have closed relation to ISIC or CPC, and CPC must be based on industry-of-origin? The main reason we think is that the CPC itself cannot be well used in national practical statistical work. So we think that the structure of CPC should be rebuilt in accordance with the structure of ISIC.

We think in the whole classification family, the benchmark classification will be the ISIC and the CPC, other classification should be have an close correspondence to this two classification. In other words, other classification can be formulated according to the two classifications.

Some special question about the service classification and product:

In ISIC and CPC, is there a need to clearly define the service industry and service product? Is there a need to define the service industry and service product in ISIC and CPC with reference

to the WTO service classification? If yes, how to deal with the construction, does it belong to service industry?

In the service part of CPC, we think the classifying the detailed level below the 2-digital should have a principle. Because in the practical statistics, it include many content. We think the principle will be the following:

- 1) Every service product classified in CPC should be provided for outside.
- 2) Every service product should have a price. If the service cannot be priced in market, it should not be classified in CPC list.

Additional, we will propose more comments after farther examining the draft of the new classifications.

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