

Telecommunication Price Statistics in China

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1 General situation of services price statistics

Value-added estimation of services is the important ingredient of GDP estimation. Since reform and opening, the proportion of services of our country within GDP is raised from 24.2% of 1978 to 40.2% of 2005, and services develops even faster in recent years. It is regretting that services price statistics develop further slowly to services, for example, to fail set up regular statistic survey system for main trade of services, services price data and resource not be accurate and widespread and having large gaps and so on. These factors result that there are severe underestimation for value-added of services.

Price is the foundation of value-added estimation. It is urgent requirement to consummate price statistics index system and carry out services price statistics with plan, which can reform deeply statistical method of our country and improve national economy estimation level. Therefore, since 1998, National Bureau of Statistics of China have made price statistics for real estate which is very important industry in services and tried to formulate telecommunication price statistical scheme in 2003. Also in January 2005 they carried out trying to take statistics for telecommunication price in Harbin (in Heilongjiang province) and other three cities. Now introduce telecommunication price statistical survey framework and compiling methods as follows:

2 Concept and definition in telecommunication price statistics

The businesses of telecom industry mainly include the telephone service, data communications, Internet access applications and so on.

- **Local telephone service:** This is a voice service through the local wire telephone system and the wireless telephone system for customers.

- **International and domestic long-distance telephone service:** Long-distance telephone service is categorized by domestic long-distance, international long-distance and long-distance between the mainland and Hong Kong, Macao and Taiwan.

- **IP direct dialing telephone service:** This is an IP service realized through a fixed or mobile telephone terminal, by dialing the access code 17909 or 17901 etc. This service is much appropriate to customers who have various long-distance call requirements.

- **Calling card service:** Customer can make telephone calls at any time and at any place, by using various kinds of calling cards, some of them can be used throughout the country and some of them can only be used in the provincial regions, the cards are categorized by the IC Card, 190300 Card, Yitong (cheap call) Card, 17901 Re-chargeable Card, V-net Card, 200 Card, 201 Card, etc.

- **Data communications services:** Data communications services for domestic and overseas customers including ATM, FR, DDN, IPLC and bandwidth-type services as well as such virtual networking scenarios as IP-VPN, etc.

3 Outline of survey

3.1 Task of survey

- collect telecommunication price in cities concerned.
- compiling telecommunication price index in the whole nation and some big cities.
- carry out statistical analysis with telecommunication price statistic data in order to reflect new situation and new problems.
- announce periodically telecommunication price indices.

3.2 Objectives and coverage of survey

Business and agents of 35 Large-scale and Medium-scale cities in the whole nation.

3.3 Contents of survey

Real telecom price which is investigated by telecom business in the survey-day.

3.4 Frequency of survey

The survey is on quarterly base.

3.5 The method of survey and data collection

The survey is a combined survey of key investigation and typical investigation. Mail questionnaire and interview will collect telecommunication piece in each month on 15th. Quarterly price is calculated on monthly price of sample by arithmetic average method.

3.6 Principle of selecting survey unit and item

Principle of selecting of survey items

- business income take more proportion
- management condition is more steady
- commodity with homogeneity should keep invariable comparability and relatively.

Principle of selecting survey units

- select all main telecom business as far as possible
- manage more steady agents

Survey units should include all survey items and for the same item it is necessary to ensure more than 2 units to be reported.

4 Compiling method and formulas of price indices

It takes a method that is from down to up and is calculated gradually to compile telecom price indices.

Step1 Calculate the average price of the survey units of survey items.

Simple average formula calculation for average price of survey items:

$$P = \frac{\sum P_n}{N}$$

P stands for average price of enterprises investigated.

N stands for numbers of times.

P_n stands for price of the n th survey unit.

Step2 Calculate price indices of survey units

$$K = \frac{P_1}{P_0}$$

K stands for price indices of survey units.

P_1 stands for price of survey units in reporting time.

P_0 stands for fixed-base price of survey units

Step3 Calculate price indices of survey items

Geometric mean formula should be used to calculate price indices of investigated items.

$$K_m = \sqrt[n]{K_{m1} \times K_{m2} \times \dots \times K_{mn}}$$

K_m stands for the mth price indices of survey items.

K_{mn} stands for the nth price indices of survey units of the mth survey item.

Step4 Calculate price indices of sub-class

According to price index of investigated items, geometric mean formula should be used to calculate price indices of sub-class.

$$I_i = \sqrt[m]{K_1 \times K_2 \times \dots \times K_m}$$

I_i stands for price indices of the ith sub-class.

K_m stands for the mth price indices of investigated item in the ith sub-class.

Step5 Calculate price indices of sub-group

Calculate price indices of sub-group according to ones of sub-class.

$$I_j = \frac{\sum I_i W_i}{\sum W_i}$$

I_j stands for price indices of sub-group.

W_i stands for weight number of the ith sub-class.

I_i stands for price indices of the ith sub-class.

Step6 Calculate aggregate price index of telecommunication industry price

$$I = \frac{\sum I_j W_j}{\sum W_j}$$

I stands for aggregate price index of telecommunication industry price.

W_j stands for weight number of the jth sub-group.

I_j stands for price indices of the jth sub-group.

5 weighting data resources

Owing to different effects of every survey item in the development of telecommunication economy, fluctuation of price brings about various impacts in degree to total level of the telecommunication

industry. Therefore, in order to reflect correctly mean level of price fluctuation and calculate weighted mean, we need establish scientific and rational weight number. Weighting data can be obtained from management agencies of telecommunication. Weight number should be kept three years invariably in principle, which can be adjusted appropriately if frame of weight numbers change obviously in a year.

6 Collection of investigated data

Survey units chosen, according to requisitions of a survey scheme, ascertain survey items and organize related personnel to collect data, and then arrange the investigated data so as to report upper local statistical department in defined time.

Appendix1

Report form of telecommunication price

Name of unit:

Unit register type:

Unit code:

Year quarter:

| Item name | Code | Measuring unit | Unit price of reporting time (RMB Yuan) | Unit price of elementary time (RMB Yuan) | Price index (%) |
|-----------|------|----------------|--|---|-----------------|
| A | B | C | 1 | 2 | 3 |
| | | | | | |

Appendix2

Investigated items list of telecommunication industry

| Code | Item name | Unit | Code | Item name | Unit |
|--------|--------------------------|-------------|--------|--------------------------|-------------|
| 110000 | I. Domestic | | 120000 | II. International | |
| 110010 | 1 Fixed-line telephone | | 120010 | 1. Telephone | |
| 110011 | (1) long-distance | Yuan/minute | 120011 | (1) fixed-line telephone | Yuan/minute |
| 110012 | (2) local | Yuan/minute | 120012 | (2) mobile telephone | Yuan/minute |
| 110020 | 2 Mobile telephone | | 120013 | (3) IP card | Yuan/minute |
| 110021 | (1) long-distance | Yuan/minute | 120020 | 2. Data communication | |
| 110022 | (2) local | Yuan/minute | 120021 | (1) communication fee | Yuan/minute |
| 110030 | 3. IC(IP) card | | 120022 | (2) rent fee every month | Yuan/month |
| 110031 | (1) long-distance | Yuan/minute | | | |
| 110032 | (2) local | Yuan/minute | | | |
| 110040 | 4. Data communication | | | | |
| 110041 | (1) communication fee | Yuan/minute | | | |
| 110042 | (2) rent fee every month | Yuan/month | | | |
| 110050 | 5. Message service | | | | |
| 110051 | (1) message | Yuan/month | | | |
| 110052 | (2) call | Yuan/month | | | |