# Producer Price Index for Computer Services and Related Activities in Korea

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# 1. Introduction

Korea started to compile the PPI for the service sector in 1995, and with base year 2000 has compiled service sector PPI for 77 items. There are five items related to computer services.

- Three of them are computer software- and hardware-related items - data processing fees, computer programming fees, and computer repair charges.

- The other two are the computer communication-related items : internet access charges and information service charges.

- The total weight of these five items is 22.4, and they account for 7.6% of the total service sector weight of 294.2.

## 1.1 Classification

The KSIC (Korean Standard Industry Classification) based on the ISIC is used as the basic classification system for compilation of the PPI for services.

- 3 items : ISIC Rev. 3.1 Code 72(computer services)
- 2 items : Code 64.2(telecommunications)

## 1.2 Weighting

Korea's PPI for services was compiled on a trial basis at first, using the intermediate demand of the Input-Output Tables as the universe of the weighting, because it was derived from the CSPI

Since then, however, the PPI for services has also been compiled using service sector output of the Input-Output Tables as the weighting universe, because output is used as the weighting universe of the PPI for commodities.

## 1.3 Sample selection

The BOK uses the cutoff sample method to select the surveyed objects.

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# 2. Computer service and related activities

## 2.1 Computer programming fees

The computer software program development industry is the most important in the computer-related service. Computer programming fees are surveyed to compile the PPI for services of this industry.

- Computer programming fees are generally divided into two parts -customized software development fees and prepackaged software development fees.

### Customized software development

- It often takes more than one year to complete the software.
- The types of software consist of personnel management, financial management, production management, and accounting system software, etc.
- The BOK uses model pricing(standard price) = labor costs for programmers + technology fees + other related costs

**Prepackaged software**

- The products of Microsoft are commonly used when it comes to computer operating systems or spread sheets. As Korean software, word processors, anti-virus software, and AD-ware are also commonly used.

- The main problem when surveying prices is that publishers are highly uncooperative. For this reason, market prices, which can be easily obtained from internet shopping malls, are used instead.

## 2.2 Data processing fees

Data processing services comprise data input, data output, computer rental fees, costs of checking input, and fees for dispatch of staff for data input. Data input, the greatest part of data processing, is the work of inputting large amounts of data consisting of numbers and letters.

- The price of data processing services is decided by unit cost per stroke.
  Input of statistical data at National Tax Service and printing of customer bills by credit card and communication companies make up the greatest part.

- The unit prices of data processing services are announced by the Ministry of Information and Communication every year and are used in the relevant business fields.

- Recently, input data and data output work dependent on employees scarcely occurs. Accordingly, it is expected that data processing fees will be removed from the product basket in the PPI with base year 2005.

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## 2.3 Computer repair charges

Computer repair services are after-sale services done by the large domestic PC manufacturers such as Samsung, LG, and Trigem. The computer repair service workload is growing as the number of domestic computers in offices and homes increases.

- Even though the computer was used mainly for professional office work in the past, with the spread of PCs into homes it is widely used for a variety of domestic living purposes these days.

- There are two ways of after-sale service provision. Customers can go to the service center in person, or they can request an engineer to visit their offices or homes to conduct repairs.

- Specifications of computer repair services can be sub-classified as basic traveling expenses, replacement costs for broken parts, and OS installation costs. The price of computer repair services is openly announced on the web.

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## 2.4 Internet access charges

The reason Korea has become one of the strong countries in use of the internet is based on the construction of a solid nationwide telecommunications network with the development in the 1980s of the TDX-1 wired telephone exchange system. Locally-developed electronic switchboards were installed all over the country. .

- From the 1990s, optical fiber cables were laid, with the widespread diffusion of PCs, and played a role as backbone of the information and communication network.

- Recently, the communication network has become more varied as wireless internet by use of CDMA cellular phones is also available.

- In 2006, the Internet penetration rate of Korea was 70.5 percent, one of the highest in the world.

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- Pointing to another reason for Korea becoming one of the strong countries in internet usage, there is a mechanical superiority of Hangeul (the Korean alphabet). In the case of Hangeul vowels, it is possible to express every one by using combinations of only three keys ( ㅣ ㅡ ᆞ ).

- The specifications of internet access charges are broadly subclassified into three types - for business, for internet cafe, and for home use. Each type is subclassified again according to capacity.

- Internet access charges are announced on the web sites of the communication network companies. However, it is true that there is some difficulty in measuring price changes, as the rate structure is rather complicated due to the variety of discount rates.

# Key Pad

vowel

consonant

## 2.5 Information service charges

Information service charges are charges for entertainment-related services, such as provision of access to music, movies and games, and for conduct of business-related activities - through the internet, cellular phones, and other online networks.

- Charges for services provided through the internet maintain the largest share here, because of the internet's strong points in allowing stable receipt of information and data due to its nationwide diffusion and fast connection speed.

- The specifications of information service charges are broadly subdivided into the internet, cellular phones, and other on-online communications.

- Internet service charges are subdivided into the categories of music, movies, games, operation of personal web sites, movie reservations, internet commercial transactions, and enterprise-related activities. In the case of cellular phones, the specifications mainly comprise personal entertainment services.

- The actual contraction prices are surveyed.

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# 3. Function as a GDP deflator

The PPI is widely used as a deflator for changing various nominal macro-economic indicators, such as output and value-added in the service sector, into real indicators.

However, there has been demand for enlargement of the coverage of the PPI, because the number of items in the service sector is not sufficient and the PPI is not compiled in the non-market service sectors including public administration, defense, and social welfare services.

The following methods are demanded : compiling long-term time series of price indexes at the service specification- and price-levels, below the item-level; application of internal weighting for each specification; survey of the real prices on items for which model pricing is now used, and adoption of the cost estimation method for non-market services.

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