

**The 2005 Base Corporate Goods Price Index
Hedonic Regression Model for Quality Adjustment¹
– Servers –**

The Bank of Japan (BOJ) compiles the Corporate Goods Price Index (CGPI) which focuses on the prices of goods traded among corporations. BOJ surveys the prices of the representative products in each commodity category and when they lose their representativeness in the market, they are replaced accordingly. To account price changes with the quality being constant, quality adjustments between old and new products need to be done. BOJ employs various quality adjustment methods and hedonic regression method is one of them. BOJ updates the regression model for “servers.” See the appendix 1 for the results.

The details of samples for the estimation are as follows.

- I. The price data for servers are taken from “Japan Server Market Study,” the IDC Japan database.
- II. Specifications for each product are taken from the IDC database.
- III. The number of the observations for servers is 110 . The data from 2008/Q4 to 2009/Q3 are used to estimate the hedonic regression model, which is adopted from February 2010 for the quality adjustment. The quarterly price data used for the estimation are the ones at the time of first shipment².

¹ For more details, see the [Outline of “Corporate Goods Price Index \(CGPI, 2005 base\)”](#) on BOJ website.

² The quarterly price data at the time of first shipment may be appropriate for the quality adjustment since sample prices of CGPI are usually replaced by the prices of corresponding new products soon after the release.

Estimation Result for Servers

Estimated Model	2008/Q4~2009/Q3	(Ref.) 2007/Q4~2008/Q3
	Log-Linear Model	Log-Linear Model
Intercept	9.248 ***	3.663 **
Processors/Standard Supported Quantity	0.451 **	0.820 ***
Cores/Processor	0.589 ***	0.228 ***
Standard HDD (GB)	0.324 ***	0.262 ***
Clock Frequency (MHz)	--	0.615 ***
Standard Memory (MB)	--	0.264 ***
Dummy Variables		
Socket Capability not less than 4	0.428 **	--
Processor Type		
Xeon7000 sequence	0.713 ***	0.387 ***
Redundancy		
FAN	0.235 **	0.345 ***
Hot-Plug Capability		
PSU	0.287 **	--
HDD	--	0.211 **
HDD Drives		
SAS	--	0.225 ***
Producer		
Producer A	0.470 ***	0.258 ***
Producer B	0.431 ***	0.206 **
Producer C	0.698 ***	--
Producer D	0.661 ***	--
Producer E	0.516 ***	--
Period		
2009/1Q	0.458 ***	--
2009/2Q	0.328 **	--
2009/3Q	0.356 ***	--
R ²	0.841	0.854
Adjusted R ²	0.815	0.840
Standard Error of Regression	0.335	0.413
Mean of Dependent Variable	12.958	13.154
Number of Observations	110	127

Note:

1. *, ** and *** denote significance at the 10%, 5% and 1% level, respectively.