Indices of all Industry Activity – Overview of the 2010 Base Revision

September 7, 2015
Research and Statistics Department
Minister's Secretariat, Ministry of Economy, Trade and Industry (METI)

1. The Basic Concept behind the Indices of all Industry Activity

The Indices of All Industry Activity are compiled with the aim of clarifying the state of production activity in Japanese industry as a whole from a supply-side perspective.

2. Method of Compilation

The Indices of All Industry Activity are compiled by weight-averaging the three component indices listed below using the inter-industry input-output table sectoral gross value-added constituent ratio for the base year (2010).

Indices of Construction Industry Activity (calculated by METI on the basis of the Construction Industry Activity Index)
Indices of Industrial Production
Indices of Tertiary Industry Activity

It was decided that, due to a fall in demand from Indices users, the Indices of Agriculture, Forestry and Fisheries (which was calculated by METI for the 2005 base index for historical index data only) would not be compiled for the 2010 base index. In addition, because the Indices of Government Services etc. (which had previously been published as part of the Indices of Tertiary Industry Activity) had not been compiled after the 2005 baseline indices, the Indices of Government Services would, like the Indices of Agriculture, Forestry and Fisheries, not be included in the compilation of the 2010 base index for the Indices of All Industry Activity. The changes in the indices used for compilation of the 2010 base index for the Indices of All Industry Activity as compared to the indices used in 2005 are as shown in Table 1 below.

Table 1 Relationship between the Old and New Versions

2010 Base		2005 Base
Indices of All Industry Activity	←	Indices of All Industry Activity (excluding the Indices of Agriculture, Forestry and Fisheries and the Indices of Government Services etc.)
Indices of Construction Industry Activity		Indices of Construction Industry Activity
Indices of Industrial Production		Indices of Industrial Production
Indices of Tertiary Industry Activity		Indices of Tertiary Industry Activity
(Discontinued)	←	Indices of All Industry Activity (excluding the Indices of Agriculture, Forestry and Fisheries)
		Indices of Construction Industry Activity
		Indices of Industrial Production
		Indices of Tertiary Industry Activity
		Indices of Government Services etc.
(Discontinued)	←	Indices of All Industry Activities (compiled for historical index data only)
		Indices of Agriculture, Forestry and Fisheries (compiled for historical index data only)
		Indices of Construction Industry Activity
		Indices of Industrial Production
		Indices of Tertiary Industry Activity
		Indices of Government Services, etc.

3. Revision to Industry Classification and Data Series Used

There has been no change in either the industry classification or the data series used as compared to the 2005 base.

However, it should be noted that, in the 2010 base, in addition to the regular industry classification, an additional revised series has also been introduced, using a classification based on tail-end series properties, with the establishment of a new sub-index within the Indices of Construction Industry Activity: Private Non-Housing Construction Investment, established by combining the Indices of Building Work on Non-housing (private sector) with the Indices of Civil Engineering Work (private sector).

Table 2 Data and Deflators Used in the Indices of All Industry Activity

Industry	Data Used in the 2010 Base	
	Adopted Data	Deflator
Indices of All Industry Activity		
Indices of Construction Industry Activity		
Indices of Building and Civil Engineering Work (private sector)		
Indices of Building Work (private sector)		
Indices of Building Work on Housing (private sector)	Building work on housing (private sector) Monthly Quick Estimate of Construction Investment(Put in Pace) (MLIT)	Private-sector housing Building Construction Cost Index (Construction Research Institute)
Indices of Building Work on Non-housing (private sector)	Building work on non-housing (private sector) Monthly Quick Estimate of Construction Investment(Put in Pace) (MLIT)	Non-housing Building Construction Cost Index (Construction Research Institute)
Indices of Civil Engineering Work (private sector)	Civil engineering work (private sector) Monthly Quick Estimate of Construction Investment(Put in Pace) (MLIT)	Other civil engineering Construction Cost Deflator (MLIT)
Indices of Building and Civil Engineering Work (public sector)		
Indices of Building Work (public sector)	Public building Monthly Quick Estimate of Construction Investment(Put in Pace)(MLIT)	Non-housing, non-wooden construction Construction Cost Deflator (MLIT)
Indices of Civil Engineering Work (public sector)	Public civil engineering Monthly Quick Estimate of Construction Investment(Put in Pace) (MLIT)	General civil engineering (public sector) Construction Cost Deflator (MLIT)
Indices of Industrial Production	Indices of Industrial Production (METI)	
Indices of Tertiary Industry Activity	Indices of Tertiary Industry Activity (METI)	

4. Weighting

As with the Indices of Tertiary Industry Activity, the weights used were calculated from the weights used in the Industry Input-Output table sectoral gross value-added data. As in past years, the value-added data from the Industry Input-Output Tables (Finalized Version) published by the Ministry of Internal Affairs and Communications were used to calculate the weights. However, as the most recent Industry Input-Output Tables are for the year 2011, which is not consistent with the base year for the Indices of All Industry Activity, the rates of change etc. shown in the Updated Industry Input-Output Tables for the years 2010 and 2011 (compiled by METI) were used to estimate value-added data for 2010.

It should be noted that, in relation to the Indices of Tertiary Industrial Activity component index within the Indices of All Industry Activity, “Home Electricity Generation,” “Home Rental (Imputed Rent)” and “In-house R&D Activity” had been included in the calculate of value-added for the Indices of Tertiary Industrial Activity. For a number of reasons (including non-existence of market transactions), these items have been excluded from the scope of the Indices of Tertiary Industrial Activity.

Table 3 Comparison of Weights Used Under the Old and New Base

Classification	2010 Base
Indices of All Industry Activity	100.00
Indices of Construction Industry Activity	5.77
Indices of Building and Civil Engineering Work (private sector)	3.54
Indices of Building Work (private sector)	2.86
Indices of Building Work on Housing (private sector)	1.89
Indices of Building Work on Non-housing (private sector)	0.97
Indices of Civil Engineering Work (private sector)	0.68
Indices of Building and Civil Engineering Work (public sector)	2.23
Indices of Building Work (public sector)	0.33
Indices of Civil Engineering Work (public sector)	1.90
Indices of Industrial Production	20.78
Indices of Tertiary Industry Activity	73.45

(Re-edited series)

Indices of Construction Industry Activity	5.77
Private Non-housing Construction Investment	1.65
Private Housing Construction Investment	1.89
Public Construction Investment	2.23

(For reference only) Comparison of the Weights Used Under the Old and New Base for All Industry Activity with Agriculture, Forestry and Fisheries and Government Services etc. Included

Classification	(For reference only) 2010 Base *	2005 Base	Difference
Indices of All Industry Activity	100.0	100.0	
(Discontinued) Indices of Agriculture, Forestry and Fisheries	1.2	1.4	-0.2
Indices of Construction Industry Activity	5.1	5.7	-0.6
Indices of Industrial Production	18.3	18.3	0.0
Indices of Tertiary Industry Activity	64.6	63.2	1.4
(Discontinued) Indices of Government Services etc.	10.8	11.4	-0.6

* estimates

5. Seasonal Adjustment

Regarding the Indices of All Industry Activity seasonally adjusted index, whereas in the past this has been calculated using a direct adjustment method that involves applying seasonal adjustment to the original Indices of All Industry Activity (which is obtained by weight-averaging the component indices), under the 2010 base, a switch has been made to the use of an indirect adjustment method whereby the seasonally adjusted index is obtained by weight-averaging the seasonally adjusted indices of the three component indices (the Indices of Construction Industry Activity, Indices of Industrial Production, and Indices of Tertiary Industry Activity). In the case of the Indices of Industrial Production and Indices of Tertiary Industry Activity, rather than specially implementing seasonal adjustment for these data, the officially published seasonally adjusted values are used.

The seasonal adjustment model used for index series other than those noted above (i.e. for the Indices of Construction Industry Activity and its component sub-indices) is the ARIMA model with the seasonal model options (using the X-12-ARIMA program developed by the U.S. Census Bureau).

It should be noted that seasonally adjusted Indices of All Industry Activity calculated using the direct adjustment method have also been published (as a reference series), in order to facilitate comparison with index data prepared according to the 2005 base.

Table 4 Seasonal Adjustment Specifications

Indsutry Category	ARIMA Model	Trading-day/Leap year	Public Holiday
Indices of Construction Industry Activity	(0 1 0) (0 1 0)	—	—
[Reference series] Indices of All Industry Activity (Direct seasonal adjustment)	(0 1 2) (0 1 1)	tdnolpyear lpyear	○