

# **Hotel Income Index. (HII)**

## **Base 2008**

**(as of January 2009)**

**Methodological note**

INSTITUTO NACIONAL DE ESTADISTICA



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The *Hotel Income Index* (HII) is a statistical measurement of the monthly evolution of the income received by hotels.

The HII complements the information provided by the Hotel Price Index (HPI) given that, whereas the HPI measures the evolution of hotel prices, the HII measures the joint evolution of the prices and the application of the different fees in the target period of study.

Each indicator reflects a different aspect of hotel activity: while the HPI reflects the variations produced, exclusively, by alterations in prices, maintaining a constant weighting structure, the HII can also vary as a result of changes in the type of client from one year to another.

Therefore, the Hotel Income Index (HII) is a value index that compares the income obtained in two different periods, in which, both the prices and the weighting structure are variable.

Information from the Tourist Accommodation Occupancy Survey is used to obtain this: Hotel Establishments (HOS), with the information that is collected monthly, from some 10,900 establishments in the summer and some 9,200 in the winter, to which a questionnaire is sent. From this questionnaire, information is obtained regarding hotel occupancy (guests registered, overnight stays, occupancy rate, etc.), structure (bedplaces, personnel, etc.) and the rest of the variables of interest, with a broad breakdown by geography and by establishment category. The questionnaire requests, among other variables, the ADR (Average Daily Rate) or average daily fee, applied to different types of client, for a double room with a bathroom. These fees are broken down according to the type of client to which they have been applied:

- Traditional tour operators
- Traditional travel agencies (including hotel vouchers and checks)
- Companies
- Individuals
- Groups
- Direct hiring on the hotel website and/or the hotel chain website
- Online tour operators
- Online travel agencies
- Others

This breakdown by type of client, as well as the introduction of the ADR concept in the section on prices in the HOS questionnaire, is an innovation introduced in January 2008. Until that time, data had been requested regarding prices, broken down by type of fee (see the methodology of the HII, base 2001).

Both improvements have been introduced in order to respond to the changes occurred in the sales and distribution channels of the hotel sector that have been generated by Internet use (for example, online travel agencies and tour operators, or direct hiring on hotel websites), and to employ the price variables used by said sector and which are available in the management systems of hotel establishments.

These innovations require a base change in the HII, to introduce in the computation of the index, a new breakdown by type of client, as well as the use of the ADR, which is considered to be the average income obtained by the provision of the accommodation service, and which is calculated as the quotient between the income received in the reference period for each of the client categories, and the number of rooms that have been occupied by said clients during that period.

Indices and interannual variation rates are calculated and disseminated for the 17 Autonomous Communities, Ceuta and Melilla, as well as for the categories on a national level.

### Computation of the HII, base 2008

The modifications introduced in the HOS questionnaire do not have a bearing on the philosophy of the methodology used in the computation of the HII, that is, the HII is the quotient between the income obtained for the provision of the accommodation service in a double room with a bathroom, in the period of study and in the base period. Until December 2008, however, the different application percentages of each of the fees (see the methodology of the HII, base 2001) were considered, whereas, beginning in January 2009, the index will bear in mind the application percentages according to the type of client who has hired the room. In addition, the new base uses the ADR variable.

As of January 2009, the mathematical expression for the computation of the HII is:

$${}_{m(08)}HII^{mT} = \frac{\sum_{i,j,k,t} M_{ijkt}^{mT} \cdot A_{ijkt}^{mT}}{\sum_{i,j,k,t} M_{ijkt}^{m(08)} \cdot A_{ijkt}^{m(08)}} \cdot 100$$

where:

$M_{ijkt}^{mT}$ : is the ADR of establishment  $i$ , of category  $k$ , in province  $j$ , applied to client  $t$ , in month  $m$ , of year  $T$ .

$M_{ijkt}^{m(08)}$ : is the ADR of establishment  $i$ , of category  $k$ , in province  $j$ , applied to client  $t$ , in month  $m$ , of year 2008.

$A_{ijkt}^{mT}$ : is the number of rooms occupied by type of client  $t$ , in establishment  $i$ , of category  $k$ , in province  $j$ , in month  $m$ , of year  $T$ .

$A_{ijkt}^{m(08)}$ : is the number of rooms occupied by type of client  $t$ , in establishment  $i$ , of category  $k$ , in province  $j$ , in month  $m$ , of year 2008.

### Base change. Linked series.

Due to the base change carried out, it is not possible to compare the data from 2009 with that from 2008, and therefore, it is necessary to link the series in order to avoid the break in them.

To this end, the HII has been calculated for the months of 2008, base 2008, all of them being 100. By retroactively applying the interannual variation rates published month by month, the series were reconstructed to January 2001. With this criterion, the rates already published remain invariable.

We thus avoid the break in the series caused by the base change, and do not lose interannual comparability.

The complete series of the HII in base 2001 (until December 2008, and in base 2008, are available to the user on the INE website ([http://www.ine.es/en/welcome\\_en.htm](http://www.ine.es/en/welcome_en.htm)).