

REFERENCE INDEX FOR THE INFLATION LINKED BTP: NUMERICAL EXAMPLE

The new European inflation linked BTP has, as a value of reference, the Harmonised indices of consumer prices - All items excluding tobacco - Index (**HICP – euro-zone**), edited monthly by Eurostat on the following website address:

<http://epp.eurostat.ec.europa.eu/tgm/table.do?tab=table&init=1&language=en&pcode=teicp240>

Suppose the reference index for **September 15th, 2003** is to be calculated, the June index and the July index have to be taken into account:

MONTH OF REFERENCE		EUROSTAT INDEX
<i>(m-3)</i> 3 months preceding the one in which the calculus is factored	June 2003	112.7
<i>(m-2)</i> 2 months preceding the one in which the calculus is factored	July 2003	112.5

Although there are already 15 days spent in September, the day when the interests start to accrual is not to be considered so that the calculus is performed taking into account only **14** days; that number has to be divided by the total days included in the month the reference index is calculated for, which are **30** days.

Hence the **reference index** will be obtained by the following formula:

$$112.7 + (112.5 - 112.7) * \frac{14}{30} = 112.606666666666.$$

The index must be cut off at the sixth decimal place (112,606666) then rounded at the fifth one: **112.60667**.

Hence, the value of the **Reference Inflation** for the 5 year inflation linked BTP (September 15th 2003 – September 15th 2008) on the starting date is **112.60667**

In a very similar way it is possible to calculate the reference index for each day of September 2003:

DATE	REFERENCE INDEX	DATE	REFERENCE INDEX	DATE	REFERENCE INDEX
09/01/2003	112.70000	09/11/2003	112.63333	09/21/2003	112.56667
09/02/2003	112.69333	09/12/2003	112.62667	09/22/2003	112.56000
09/03/2003	112.68667	09/13/2003	112.62000	09/23/2003	112.55333
09/04/2003	112.68000	09/14/2003	112.61333	09/24/2003	112.54667
09/05/2003	112.67333	09/15/2003	112.60667	09/25/2003	112.54000
09/06/2003	112.66667	09/16/2003	112.60000	09/26/2003	112.53333
09/07/2003	112.66000	09/17/2003	112.59333	09/27/2003	112.52667
09/08/2003	112.65333	09/18/2003	112.58667	09/28/2003	112.52000
09/09/2003	112.64667	09/19/2003	112.58000	09/29/2003	112.51333
09/10/2003	112.64000	09/20/2003	112.57333	09/30/2003	112.50667

In order to obtain the **indexation coefficients** is necessary to divide each day's reference index by the value of the reference index as of **September 15th, 2003**, which is the base index. The Ministry announced by press release the indexation coefficients for the five year index linked BTP, real annual coupon 1.65%, due in September 15th, 2008.