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| National Bank of Belgium |
| JDemetra+ |
| Easter effects |
|  |
| **Palate Jean** |
| **9/13/2017** |

The Easter variable defines a time period before Easter. The Easter effect is defined by the relative number of days that occurs in the different months (February, March, April and May for the JulianEaster) or quarters (first or second quarter).

To avoid seasonal effects, the series is corrected using long term mean corrections. Tramo uses a very simple correction: we remove 0.5 from March and from April (independently of the duration); X13 uses a more sophisticated solution.

For instance, using a duration of 10 and considering that the end day is Easter (see below), we have:

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| --- | --- | --- | --- | --- | --- | --- | --- |
| Year | Easter | #Days in March | #Days in April | Effect in March (not corrected) | Effect in April (not corrected) | March  (Tramo) | April  (Tramo) |
| 2014 | 5 April | 5 | 5 | 0.5 | 0.5 | **0** | **0** |
| 2015 | 27 March | 10 | 0 | 1 | 0 | **0.5** | **-0.5** |
| 2017 | 16 April | 0 | 10 | 0 | 1 | **-0.5** | **0.5** |
| 2018 | 1 April | 9 | 1 | .9 | .1 | **0.4** | **-0.4** |

Note that the Easter variable may be 0 in some years.

See below the specific features of Tramo-Seats and of X13 concerning Easter.

## Easter in Tramo

The Easter period in Tramo is defined by the daily period [*end* – duration, *end*] where *end* may be Easter -1 (legacy solution), Easter (default) or Easter Monday.

As mentioned above, the long term mean correction is always -.5 for March and for April.

## Easter in X13

The Easter period in X13 is defined by the daily period [*end* – duration, *end*] where *end* is Easter-1.

The long term mean corrections have been computed on a long period, for all possible durations.

See below the mean corrections for March and April used in X13

Remark:

See the discussion in JD+ - Trading days for the impact of long term mean corrections.