# OLCFACTORS

Updated: 31 Mar 2016

Use OLCFACTORS to return the components used in the calculation of price and yield for a bond with an odd last coupon. OLCFACTORS supports odd last coupon bonds with up to 2 quasi-coupon periods.

## Syntax

```
Public Shared Function OLCFACTORS(
    ByVal Settlement As Date,
    ByVal Maturity As Date,
    ByVal LastCoupon As Date,
    ByVal Rate As Double,
    ByVal Price As Double,
    ByVal Yield As Double,
    ByVal Redemption As Double,
    ByVal Frequency As Double,
    ByVal Basis As String,)
```

## Arguments

*Settlement*

the settlement date of the security. *Settlement* is an expression that returns a **Date**, or of a type that can be implicitly converted to **Date**.

*Maturity*

the maturity date of the security. *Maturity* is an expression that returns a **Date**, or of a type that can be implicitly converted to **Date**.

*LastCoupon*

the last coupon date of the security. The period from the last coupon date until the maturity date defines the odd interest period. All previous coupon dates are assumed to occur at regular periodic intervals as defined by *Frequency*. *LastCoupon* is an expression that returns a **Date**, or of a type that can be implicitly converted to **Date**.

*Rate*

the security's annual coupon rate. *Rate* is an expression that returns a **Double**, or of a type that can be implicitly converted to **Double**.

*Price*

the price of the bond. *Price* is an expression that returns a **Double**, or of a type that can be implicitly converted to **Double**.

*Yield*

the security's annual yield. *Yield* is an expression that returns a **Double**, or of a type that can be implicitly converted to **Double**.

*Redemption*

the security's redemption value per 100 face value. *Redemption* is an expression that returns a **Double**, or of a type that can be implicitly converted to **Double**.

*Frequency*

the number of coupon payments per year. For annual payments, *Frequency* = 1; for semi-annual, *Frequency* = 2; for quarterly, *Frequency* = 4; for bi-monthly, *Frequency* = 6; for monthly, *Frequency* = 12. For bonds with Basis = "A/364" or 9, you can enter 364 for payments made every 52 weeks, 182 for payments made every 26 weeks, 91 for payments made every 13 weeks, 28 for payments made every 4 weeks, 14 for payments made every 2 weeks, and 7 for weekly payments. *Frequency* is an expression that returns a **Double**, or of a type that can be implicitly converted to **Double**.

*Basis*

the type of day count to use.

| **Basis** | **Day count basis** |
|---|---|
| 0, "BOND" | US (NASD) 30/360 |
| 1, "ACTUAL" | Actual/Actual |
| 2, "A360" | Actual/360 |
| 3, "A365" | Actual/365 |
| 4, "30E/360 (ISDA)", "30E/360", "ISDA", "30E/360 ISDA", "EBOND" | European 30/360 |
| 5, "30/360", "30/360 ISDA", "GERMAN" | 30/360 ISDA |
| 6, "NL/ACT" | No Leap Year/ACT |
| 7, "NL/365" | No Leap Year /365 |
| 8, "NL/360" | No Leap Year /360 |
| 9, "A/365" | Actual/364 |
| 10, "BOND NON-EOM" | US (NASD) 30/360 non-end-of-month |
| 11, "ACTUAL NON-EOM" | Actual/Actual non-end-of-month |
| 12, "A360 NON-EOM" | Actual/360 non-end-of-month |
| 13, "A365 NON-EOM" | Actual/365 non-end-of-month |
| 14, "30E/360 NON-EOM", "30E/360 ICMA NON-EOM", "EBOND NON-EOM" | European 30/360 non-end-of-month |
| 15, "30/360 NON-EOM", "30/360 ISDA NON-EOM", "GERMAN NON-EOM" | 30/360 ISDA non-end-of-month |
| 16, "NL/ACT NON-EOM" | No Leap Year/ACT non-end-of-month |
| 17, "NL/365 NON-EOM" | No Leap Year/365 non-end-of-month |
| 18, "NL/360 NON-EOM" | No Leap Year/360 non-end-of-month |
| 19, "A/365 NON-EOM" | Actual/364 non-end-of-month |

*Basis* is an expression that returns a **String**, or of a type that can be implicitly converted to **String**.

## Return Type

`FinancialTypes.OLCFACTORS_table`

```
Class OLCFACTORS_table
  Inherits Data.DataTable
  Property Item(RowIndex As Integer) As FinancialTypes.OutputRow_OLCFACTORS

Class OutputRow_OLCFACTORS
  Public A As Double
  Public DSC As Double
  Public E As Double
  Public N As Integer
  Public NCL As Integer
  Public A1 As Double
  Public DSC1 As Double
  Public DLC1 As Double
  Public NLL1 As Double
  Public A2 As Double
  Public DSC2 As Double
  Public DLC2 As Double
  Public NLL2 As Double
  Public quasicoup As Date
  Public quasimaturity As Date
  Public C As Double
  Public LC As Double
  Public P As Double
  Public AI As Double
  Public Y As Double
End Class
```

| Column | Description |
|---|---|
| **A** | Number of accrued days from the previous coupon date to the settlement date when the settlement date is less than the last coupon date. |
| **DSC** | Number of days from the settlement date to the next coupon date when the settlement date is less than the last coupon date. |
| **E** | Number of coupon days in the coupon period in which the settlement date falls when the settlement date is less than the last coupon date. |
| **N** | Number of coupons between the settlement date and the last coupon date. If the settlement date is greater than the last coupon date then **N** = 0. |
| **NCL** | Number of quasi-coupon periods in the odd period (1 or 2). |
| **A1** | If **N** > 0 then NULL, else the number of accrued days in the first quasi-coupon period. If the settlement date is in the first quasi-coupon period then this the number of days from the last coupon date to the settlement date. If the settlement date is in the second coupon period then this is equal to **NLL1** |
| **DSC1** | Number of days in the first coupon period. If **NCL** is equal to 1 then this is the number of days from the last coupon date to the maturity date. If **NCL** = 2 then this is the number of days from the last coupon date to **quasicoup**. |
| **DLC1** | If **N** > 0 then NULL, else the number of days from the settlement date to the next quasi-coupon or maturity date. If **NCL** = 1, the number of days from the settlement date to the maturity date. If **NCL** = 2 and settlement is in the first |

| | |
|---|---|
| | quasi-coupon period then the number of days from settlement date to **quasicoup**, else 0. |
| **NLL1** | Normal length of the first quasi-coupon period. |
| **A2** | Number of days from the quasi-coupon date to the settlement date. If the quasi-coupon date is NULL then A2 is NULL. If settlement date is less than or equal to the quasi-coupon date then A2 = 0 |
| **DSC2** | Number of days from **quasicoup** to maturity date. If **quasicoup** is NULL then NULL. |
| **DLC2** | Number of days from the greater of **quasicoup** and settlement date to the maturity date. If **quasicoup** is NULL then NULL. |
| **NLL2** | Normal length of the period from the **quasicoup** to **quasimaturity**. |
| **quasicoup** | Implied maturity date with respect to the last coupon date. |
| **quasimaturity** | Implied next coupon date with respect to the last coupon date when NCL = 2. |
| **C** | Coupon amount |
| **LC** | Last coupon amount |
| **P** | Price. If *Yield* is NOT NULL then P is calculated from the inputs otherwise P is the value entered in *Price*. |
| **AI** | Accrued interest as of the settlement date. |
| **Y** | Yield. If *Yield* is NOT NULL then Y is the value entered in *Yield* otherwise Y is calculated from the inputs. |

## Remarks

- If *Settlement* is NULL then *Settlement* equals the current system processing date
- If *Rate* is NULL then *Rate* = 0.
- If *Redemption* is NULL then *Redemption* = 100.
- If *Frequency* is NULL then *Frequency* = 2.
- If *Basis* is NULL then *Basis* = 0.
- If *Frequency* invalid an error is returned.
- If *Basis* invalid (see above list) an error is returned.
- If *Maturity* is NULL then an error is returned.
- If *Issue* is NULL then an error is returned.
- If *LastCoupon* is NULL then an error is returned.
- If there is only one quasi-coupon period then quasicoup is NULL. Otherwise the next coupon date is calculated using *Frequency*, *Basis*, and *Maturity*.
- If there are 2 quasi-coupon periods then DLC1 = NLL1.

## See Also

- BONDCF - Cash flows for a bond paying regular periodic interest
- DIRTYPRICE - Dirty price of a bond
- DIRTYYIELD - Yield of a bond from the dirty price

- DIS - Price, discount rate, and/or yield of a discount security
- DISC - Discount rate
- DISFACTORS - Factors for the price calculation of a discount security
- IAM - Price and/or yield of a security paying interest at maturity
- IAMFACTORS - Factors for the price calculation of a security paying interest at maturity
- ODDFPRICE - Price of a bond with an odd first coupon
- ODDFYIELD - Yield of a bond with an odd first coupon
- ODDLPRICE - Price of a bond with an odd last coupon
- ODDLYIELD - Yield of a bond with an odd last coupon
- OFC - Calculate the price and/or yield of a bond with an odd first coupon using the ODDFPRICE equation
- OFCFACTORS - Returns the components of the ODDFPRICE equation
- OFL - Calculate the price and/or yield of a bond with an odd first and an odd last coupon using the OFLPRICE equation
- OFLFACTORS - Returns the components of the OFLPRICE equation
- OFLPRICE - Calculate the price of a security with an odd first and odd last period
- OFLYIELD - Calculate the yield of a security with an odd first and odd last period
- OLC - Calculate the price and/or yield of a bond with an odd last coupon using the ODDLPRICE equation
- PRICE - Price of a security paying regular periodic interest
- PRICEACT - Price of a bond where coupon amounts are based on number of days in the coupon period
- PRICEACTV - Cash flows and discount factors for a bond where coupon amounts are based on number of days in the coupon period
- PRICEDISC - Price of a discounted security
- PRICEFR - Price of a bond with forced redemptions
- PRICEMAT - Price of an interest-at-maturity security
- PRICESTEP - Price of a security with step-up rates
- RPI - Calculate the price and/or yield of a bond with regular periodic coupons
- RPIFACTORS - Factors for the calculation of the price of a bond that pays regular periodic interest
- TBILLEQ - Bond equivalent yield of a Treasury Bill
- TBILLPRICE - Price of a Treasury Bill
- TBILLYIELD - Yield of a Treasury Bill
- YIELD - Yield of a bond paying regular periodic interest
- YIELDACT - Yield of a bond where coupon amounts are based on number of days in the coupon period
- YIELDDISC - Yield on a discount security
- YIELDFR - Yield of a bond with forced redemptions
- YIELDMAT - Yield on an interest-at-maturity security

- YIELDSTEP - Yield of a security with step-up rates