OFLPRICE

Updated: 31 Mar 2016

Use OFLPRICE to calculate the price from yield per 100 face value of a bond with an odd first period and an odd last period. The OFLPRICE formula for a bond with an odd short first coupon is:

$$\text{PRICE} = \frac{C * \frac{DFC}{E} + \left(\frac{\frac{-C}{Y} + \frac{RV + C \times \sum_{i=1}^{NCL} \frac{DLC_i}{NLL_i}}{(1+Y)^{\sum_{i=1}^{NCL} \frac{DLC_i}{NLL_i}}}}{(1+Y)^{N}} - \frac{-C}{Y} \right)}{(1+Y)^{\frac{DSC}{E}}} - A$$

Where

A	=	C * accrued days / E
C	=	100 * coupon rate / frequency
DFC	=	the number of days from the issue date to the first coupon date
DLC_i	=	the number of days from the previous coupon date to the lesser of the next coupon date and the maturity date in the i^{th} last quasi-coupon period
DSC	=	number of days from settlement to coupon
E	=	the normal length of the first quasi-coupon period
N	=	the number of coupons between the first coupon date and the last coupon date
NCL	=	the number of quasi-coupons from the last coupon date to the quasi-maturity date
NLL_i	=	the normal length in days of the full i^{th} quasi-coupon period in the odd last period
RV	=	redemption value
Y	=	yield / frequency

The OFLPRICE formula for a bond with an odd long first coupon is:

$$\text{PRICE} = \frac{C \times \left[\sum_{i=1}^{NCF} \frac{DFC_i}{NLF_i}\right] + \left(\frac{\frac{-C}{Y} + \frac{RV + C \times \sum_{i=1}^{NCL} \frac{DLC_i}{NLL_i}}{(1+Y)^{\sum_{i=1}^{NCL} \frac{DLC_i}{NLL_i}}}}{(1+Y)^{N}} - \frac{-C}{Y} \right)}{(1+Y)^{Nqf+\frac{DSC}{E}}} - C \times \left[\sum_{i=1}^{NCF} \frac{A_i}{NLF_i}\right]$$

Where

A_i	=	number of accrued days for the i^{th} quasi-coupon period
C	=	100 * coupon rate / frequency
DFC_i	=	number of days from the issue date to the first quasi-coupon date or the number of days in the quasi-coupon period
DLC_i	=	the number of days from the previous coupon date to the lesser of the next coupon date and the maturity date in the i^{th} last quasi-coupon period

DSC = number of days from settlement date to the next quasi-coupon date or first coupon date.
E = number of days in the quasi-coupon period in which settlement occurs
N = the number of coupons between the first coupon date and the maturity date
NCF = number of quasi-coupon periods that fit in the odd first period
NCL = the number of quasi-coupons from the last coupon date to the quasi-maturity date
NLF_i = normal length in days of the full i^{th} quasi-coupon period within the odd period.
NLL_i = the normal length in days of the full i^{th} quasi-coupon period in the odd last period
Nqf = the number of whole quasi-coupon periods between the settlement date and the first coupon.
RV = redemption value
Y = yield / frequency

Syntax

```
Public Shared Function OFLPRICE(
    ByVal Settlement As Date,
    ByVal Maturity As Date,
    ByVal Issue As Date,
    ByVal First_coupon As Date,
    ByVal Last_coupon As Date,
    ByVal Rate As Double,
    ByVal Yld As Double,
    ByVal Redemption As Double,
    ByVal Frequency As Double,
    ByVal Basis As String,)
```

Arguments

Settlement

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

Issue

the issue date of the bond; the date from which the bond starts accruing interest. *Issue* is an expression that returns a **Date**, or of a type that can be implicitly converted to **Date**.

First_coupon

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

Last_coupon

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

Rate

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

Yld

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

Redemption

the bond'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

Double

Remarks

- If *Settlement* is NULL then *Settlement* equals the current system processing date.
- If *Rate* is NULL then *Rate* = 0.
- If *Yield* is NULL then Yield = 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 *Last_coupon* is NULL then an error is returned.
- If *First_coupon* is NULL then an error is returned.
- If *Issue* is NULL then an error is returned.
- If *Settlement* >= *First_coupon* then the price is calculated using `ODDLPRICE`.

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
- 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
- OLCFACTORS - Returns the components of 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