

## ODDLYIELD

Updated: 31 Mar 2016

Use **ODDLYIELD** to calculate the yield of a security with an odd last coupon period. If the settlement date is less than the last coupon date there is no closed-form solution for calculating the yield; the solution is found by iteration. If the settlement date is greater than or equal to the last coupon date then the formula for yield is:

$$YIELD = \left( \frac{RV + C \times \sum_{i=1}^{NCL} \frac{DLC_i}{NLL_i}}{P + C \times \sum_{i=1}^{NCL} \frac{A_i}{NLL_i}} - 1 \right) \times \frac{F}{\sum_{i=1}^{NCL} \frac{DSC_i}{NLL_i}}$$

Where

- RV = redemption value
- C = 100 \* rate/frequency
- F = frequency
- P = price
- NLC = the number of quasi-coupons from the last coupon date to the quasi-maturity date
- DLC<sub>i</sub> = the number of from the previous coupon date to the lesser of the next coupon date and the maturity date in the i<sup>th</sup> quasi-coupon period
- NLL<sub>i</sub> = the normal length in days of the full i<sup>th</sup> quasi-coupon period in the odd last period
- DSC<sub>i</sub> = number of days from the settlement date (or beginning of the quasi-coupon period) to the next quasi-coupon within odd period (or to redemption date) for the i<sup>th</sup> quasi-coupon period
- A<sub>i</sub> = number of accrued days for the i<sup>th</sup> quasi-coupon within odd period counting forward from the last interest date before redemption

### Syntax

```
Public Shared Function ODDLYIELD(  
    ByVal Settlement As Date,  
    ByVal Maturity As Date,  
    ByVal Last_interest As Date,  
    ByVal Rate As Double,  
    ByVal Pr 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**.

### *Last\_interest*

the last coupon date of the security prior to the maturity. The period from the last interest 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*. *Last\_interest* is an expression that returns a **Date**, or of a type that can be implicitly converted to **{paramtype}**.

### *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**.

### *Pr*

the price of the security. *Pr* 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.

<b>Basis</b>	<b>Day count basis</b>
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* 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 *Last\_interest* is NULL then an error is returned.
- If *Price* is NULL than an error is returned.

## See Also

- BONDDCF - 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

- 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
- 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
- YELDDISC - Yield on a discount security
- YELDFR - Yield of a bond with forced redemptions
- YELDMAT - Yield on an interest-at-maturity security
- YIELDSTEP - Yield of a security with step-up rates