

ODDFPRICE

Updated: 31 Mar 2016

Use the **ODDFPRICE** to calculate the price per 100 face value of a security with an odd first period. The **ODDFPRICE** formula for a bond with an odd short first coupon is:

$$\text{ODDFPRICE} = \frac{C * \frac{DFC}{E} + \left(\frac{-C}{Y} + \frac{RV}{(1+Y)^N} - \frac{-C}{Y} \right)}{(1+Y)^{\frac{DSC}{E}}} - A$$

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

DSC = number of days from settlement to coupon

E = the number of days in the quasi-coupon period

N = the number of coupons between the first coupon date and the maturity date

RV = redemption value

Y = yield / frequency

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

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

Where

A_i = number of accrued days for the ith quasi-coupon period

C = 100 * coupon rate / frequency

DFC_i = number of days from the issue date to the first quasi-coupon date (i=1) or the number of days in the quasi-coupon period (i>1).

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 period

NLF_i = normal length in days of the full ith quasi-coupon period within the odd 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 **ODDFPRICE**(
ByVal Settlement As Date,

```
ByVal Maturity As Date,  
ByVal Issue As Date,  
ByVal First_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 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**.

Issue

the issue date of the security; the date from which the security 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 security. The period from the issue date until the first coupon date defines the odd interest period. All subsequent coupon dates 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**.

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**.

Yld

the security's annual yield. *Yld* 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 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 daycount convention.

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 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* is invalid an error is returned.
- If *Basis* invalid (see above list) an error is returned.
- If *Settlement* >= *First_coupon* then **ODDFPRICE** calls the **PRICE** function.
- If *Maturity* is NULL then an error is returned.
- If *Issue* is NULL then an error is returned.
- If *First_coupon* is NULL then an error is returned.

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
- **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
- **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