

PRICEACTTV

Updated: 31 Mar 2016

Use `PRICEACTTV` to return the cash flows of a bond where coupon payments are calculated using the actual number of days in the coupon period and vary from period to period. `PRICEACTTV` also supports bonds with forced redemptions.

The first row in the resultant table is dated with settlement date passed into the function and is for the amount of the accrued interest. All the remaining rows are dated for the subsequent coupon dates and the amounts are the coupon amount plus any forced redemptions occurring on the coupon date. The row for the maturity date includes the coupon amount and the final redemption amount.

The resultant table also includes the discount factor for each period as well as the discounted cash flow value for each period. The sum of the discounted cash flow values across all the periods is equal to the clean price of the bond.

Syntax

```
Public Shared Function PRICEACTTV(  
    ByVal Settlement As Date,  
    ByVal Maturity As Date,  
    ByVal Rate As Double,  
    ByVal Par As Double,  
    ByVal Yield As Double,  
    ByVal Frequency As Double,  
    ByVal Basis As String,  
    ByVal Repayments 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**.

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**.

Par

the par value of the security. Any forced redemptions are subtracted from the par value on the redemption date and the adjusted balance is used in calculating the subsequent coupon interest. *Par* 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**.

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. *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
1, "ACTUAL"	Actual/Actual
2, "A360"	Actual/360
3, "A365"	Actual/365
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

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

Repayments

a SELECT statement, as a string, which identifies the coupon dates and the forced redemption amounts to be used in the price calculation. *Repayments* is an expression that returns a **String**, or of a type that can be implicitly converted to **String**.

Return Type

FinancialTypes.PRICEACTTV_table

Class PRICEACTTV_table

Inherits Data.DataTable

Property Item(RowIndex As Integer) As FinancialTypes.OutputRow_PRICEACTTV

Class OutputRow_PRICEACTTV

Public date_pmt As Date

Public amt_prin As Double

Public amt_coupon As Double

Public amt_prinpay As Double

Public amt_cashflow As Double

Public DIP As Double

Public DIY As Double

Public t As Double

Public DF As Double

Public PVF As Double

```

Public PVCF As Double
Public cumPVCF As Double
Public PVP As Double
Public cumPVP As Double
End Class

```

Column	Description
date_pmt	Date of the cash flow.
amt_prin	Principal amount used in the calculation of amt_coupon .
amt_coupon	amt_prin * Rate * DIP / DIY.
amt_prinpay	Principal payment amount.
amt_cashflow	amt_coup + amt_prinpay.
DIP	Number of days in the coupon period.
DIY	Number of days in the year.
t	DIP/DIY
DF	Discount factor for the period; $\text{POWER}(1+\text{Yield}/\text{Frequency}, -\text{t})$
PVF	Product of DF for current and all preceding rows.
PVCF	PVF * amt_cashflow.
cumPVCF	Sum of the PVCF .
PVP	PVCF * Par/amt_prin(Settlement).
cumPVP	Sum of the PVP .

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 *Par* = 100.
- If *Yield* is NULL then *Yield* = 0.
- If *Frequency* is NULL then *Frequency* = 2.
- If *Basis* is NULL then *Basis* = 1.
- If *Maturity* <= *Settlement* then no rows are returned.
- If *Frequency* invalid an error is returned.
- If *Basis* invalid (see above list) an error is returned.
- If *Maturity* is NULL then no rows are 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
- 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
- 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.