SWAPCURVE

Updated: 31 Mar 2016

Use SWAPCURVE to calculate discount factors, zero-coupon rates, and continuously compounded zero-coupon rates from a series of cash rates, futures prices, or swaps rates.

Syntax

```
Public Shared Function SWAPCURVE(
    ByVal InputData_RangeQuery As String,
    ByVal StartDate As Date,
    ByVal Frequency As Double,
    ByVal SpotDate As Date,
    ByVal CashBasis As String,
    ByVal FuturesBasis As String,
    ByVal SwapsBasis As String,
    ByVal Interpolation As String,
    ByVal DateRoll As String,
    ByVal Holidays As String,)
```

Arguments

InputData_RangeQuery

a T-SQL statement, as a string, the specifies the cash rates, futures prices, and swap rates to be used in the SWAPCURVE calculations. *InputData_RangeQuery* is an expression that returns a **String**, or of a type that can be implicitly converted to **String**.

StartDate

the starting date associated with the cash rates. *StartDate* is an expression that returns a **Date**, or of a type that can be implicitly converted to **Date**.

Frequency

the compounding frequency for the swaps rates. Permissible values are 1 (annually), 2 (semi-annually), 4 (quarterly) ,and 12 (monthly). *Frequency* is an expression that returns a **Double**, or of a type that can be implicitly converted to **Double**.

SpotDate

The normal settlement date associated with the *StartDate*. *SpotDate* is an expression that returns a **Date**, or of a type that can be implicitly converted to **Date**.

CashBasis

The interest basis code associated with the cash rates. Valid values are 0 (30/360), 1 (Actual/Actual), 2 (Actual/360), 3 Actual/365), and 4 (E30/360). *CashBasis* is an expression that returns a **String**, or of a type that can be implicitly converted to **String**.

FuturesBasis

The interest basis code associated with the futures prices. Valid values are 0 (30/360), 1 (Actual/Actual), 2 (Actual/360), 3 Actual/365), and 4 (E30/360). *FuturesBasis* is an expression that returns a **String**, or of a type that can be implicitly converted to **String**.

SwapsBasis

The interest basis code associated with the swaps rates. Valid values are 0 (30/360), 1 (Actual/Actual), 2 (Actual/360), 3 (Actual/365), and 4 (E30/360). *SwapsBasis* is an expression that returns a **String**, or of a type that can be implicitly converted to **String**.

Interpolation

The interpolation method to be used with the swaps rates. Valid values are L (linear) and S (Spline). *Interpolation* is an expression that returns a **String**, or of a type that can be implicitly converted to **String**.

DateRoll

The rule to be used when a calculated date lands on a non-business day. The *DateRollRule* values are:

A   actual day is returned with no adjustment.
F   next business day is returned.
M   next business day is returned unless it is in a different month in which case the previous business day is returned.
P   preceding business day is returned.
MP   preceding business day is returned unless it is in a different month in which in case the next business day is returned.

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

Holidays

a comma separated string containing the holiday (non-business) dates to be used in the calculation of the number of business days. You can use the aggregate function NBD to create an appropriately formatted string. *Holidays* is an expression that returns a **String**, or of a type that can be implicitly converted to **String**.

Return Type
FinancialTypes.**SWAPCURVE_table**

```
Class SWAPCURVE_table
    Inherits Data.DataTable
    Property Item(RowIndex As Integer) As FinancialTypes.OutputRow_SWAPCURVE

Class OutputRow_SWAPCURVE
    Public mat_date As Date
    Public df As Double
    Public rsource As nchar
    Public zero_cpn As Double
    Public cczero As Double
End Class
```

Column	Description
mat_date	Maturity date. The date of the discount factor.
df	Discount factor.
rsource	Rate source. `'C'` for cash, `'F'` for futures, `'S'` for swaps, `'I'` for interpolated.
zero_cpn	Zero coupon rate calculated from the discount factor
cczero	Continuously compounded zero coupon rate calculated from the discount factor

Remarks

- To interpolate the zero coupon or continuously compounded zero coupon rate from the discount factors use the DFINTERP function.
- Use the TENOR2DATE function to convert abbreviations like 1M and 1Y to dates based on the spot date.
- Use the ED_FUT2DATE function to convert futures contract codes to the correct settlement date based on the start date.
- Use the ED_FUT_CONV_ADJ_HL function to convert the futures price to a convexity-adjusted interest rate.

See Also

- DFINTERP - Interpolated discount factor
- ED_FUT_CONV_ADJ_HL - Convert Eurodollars futures price to forward rate using Ho Lee convexity adjustment
- INTERPDFACT - Interpolated discount factors for a range of dates
- ZEROCOUPON - Interpolated zero-coupon rate from a series of cash, futures, or swaps rates