GTWRR

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Use the aggregate function GTWRR to calculate time-weighted rates of return. GTWRR supports three different methods for calculating time-weighted rates of return. You specify the formula you want to use in the *CalcRule* variable. When *CalcRule* = 0, the following formula is used.

$$r = \prod_{t=1}^{n} \frac{MV_t + W_t}{MV_{t-1} + D_t} - 1$$

When *CalcRule* = 1, the following formula is used.

$$r = \prod_{t=1}^{n} \frac{MV_t - CF_t}{MV_{t-1}} - 1$$

When *CalcRule* = 2, the following formula is used.

$$r = \prod_{t=1}^{n} \frac{MV_t}{MV_{t-1} + CF_t} - 1$$

Where

r	is the time the time weighted rate of return
t	is the period for which the return is calculated
MV	is the ending market value for the period
D	is the amount that has been added to the portfolio during the period
W	is the amount that has been subtracted from the portfolio during the period
CF	is net cash flow for the period

Syntax

```
Public Shared Function GTWRR(
    ByVal CF() As Double,
    ByVal CFdate() As Date,
    ByVal MV As Boolean,
    ByVal CalcRule As Integer,)
```

Arguments

CF

the cash flow amounts. *CF* is an expression that returns an Array of **Double**, or of a type that can be implicitly converted to an Array of **Double**.

CFdate

the date on which the cash flow occurred. *CFdate* is an expression that returns an Array of **Date**, or of a type that can be implicitly converted to an Array of **Date**.

MV

identifies the cash flow as being the (ending) Market Value (True). *MV* is an expression that returns a **Boolean**, or of a type that can be implicitly converted to **Boolean**.

CalcRule

identifies the formula to be used in calculating the time-weighted rate of return. *CalcRule* is an expression that returns an **Integer**, or of a type that can be implicitly converted to **Integer**.

Return Type
Double

Remarks

- The function requires a series of cash flows (*CF*) and the dates on which those cash flows occurred (*CFDate*) as input. As a result, the order of the cash flows is not important.
- Dates on which the cash flow is zero, or on which there is no cash flow, do not have to be included.
- The beginning market value for a period is the ending market value for the previous period.
- Cash flows earlier than the minimum market value date are not included in the calculation.
- Cash flows later than the maximum market value date are not included in the calculation.
- If *CalcRule* IS NULL then *CalcRule* is set to 1.
- GTWRR does not require a market value for each day that there is a cash movement. All cash flows will be grouped together where the cash flow date is greater than the date of the previous ending market value and less than or equal to the current market value.
- For other time-weighted rate of return functions see TWRR and TWROR.

See Also

- EMDIETZ - Enhanced Modified Dietz
- LMDIETZ - Linked Modified Dietz
- MDIETZ - Modified Dietz
- TWROR - Time-weighted rate of return with market value indicators
- TWRR - Time Weighted Rate of Return