

TWRR

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Use **TWRR** to calculate the time-weighted rate of return. Time-weighted rate of return is a portfolio measurement statistic which can be used when there are movements of cash into and out of the portfolio.

TWRR is calculated using the follow formula:

$$r = \prod_0^n \frac{MV_n + S_n}{MV_{n-1} + P_n} - 1$$

Where

- r is the time the time weighted rate of return
- n is the period for which the return is calculated
- MV is the ending market value for the period
- P is the amount that has been added to the portfolio
- S is the amount that has been subtracted from the portfolio

Syntax

```
Public Shared Function TWRR(  
    ByVal CF As Double(),  
    ByVal CFdate As Date(),  
    ByVal MV As Boolean,)
```

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**.

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.
- Beginning market values and additions to the portfolio should be entered as cash flows where the amount is greater than zero.
- Ending market values and withdrawals from the portfolio should be entered as cash flows where the amount is less than zero.
- There is no requirement to enter beginning market values. If the beginning market value for period is zero, the beginning market value is assumed to be the ending market values from the previous period (which must be passed to the function).
- There is no requirement to enter ending market values. If an ending market value is not entered for the day on which there is a cash movement, then the ending market value is obtained from the beginning market value for the next day for which there is a cash movement. If there is no cash movement for that day, then the ending market value is calculated as the beginning market values plus the purchases minus the sales.

See Also

- EMDIETZ - Enhanced Modified Dietz
- GTWRR - Generalized time-weighted rate of return
- LMDIETZ - Linked Modified Dietz
- MDIETZ - Modified Dietz
- TWROR - Time-weighted rate of return with market value indicators