

Package ‘actuaryr’

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Title Develop Actuarial Models

Version 1.1.1

Description Actuarial reports are prepared for the last day of a specific period, such as a month, a quarter or a year. Actuarial models assume that certain events happen at the beginning or end of periods. The package contains functions to easily refer to the first or last (working) day within a specific period relative to a base date to facilitate actuarial reporting and to compare results.

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Encoding UTF-8

LazyData true

RoxygenNote 7.1.0

Imports lubridate, dplyr, magrittr, crayon, purrr, tibble

Suggests testthat, knitr, rmarkdown

VignetteBuilder knitr

NeedsCompilation no

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as_ircurve	<i>Create an interest rates curve</i>
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Description

Creates an object of class `ircurve` which represents in interest rates curve. The curve consists of interest rates and is of type either "forward" or "spot". The interest rates curve can be for monthly or yearly periods.

Usage

```
as_ircurve(rates = double(), type = "forward", period = "year")
```

Arguments

rates	vector of rates
type	"forward" or "spot"
period	"year" or "month"

Value

Interest rates curve, an object of class `ircurve`.

Examples

```
as_ircurve(c(0.01, 0.015))
as_ircurve(c(0.002, 0.001), type = "spot", period = "month")
```

change_period	<i>Change the period of an interest rates curve</i>
---------------	---

Description

Changes the period of an interest rates curve (object of class `ircurve`) from year to month or vice versa.

Usage

```
change_period(ircurve, to)
```

Arguments

<code>ircurve</code>	an object of class <code>ircurve</code>
<code>to</code>	"year" or "month"

Value

An object of class `ircurve` with changed type.

Examples

```
my_ircurve <- as_ircurve(rep(0.01, 12), period = "month")
change_period(my_ircurve, to = "year")
```

change_type	<i>Change the type of an interest rates curve</i>
-------------	---

Description

Changes the type of an interest rates curve (object of class `ircurve`) from forward to spot or vice versa.

Usage

```
change_type(ircurve, to)
```

Arguments

<code>ircurve</code>	an object of class <code>ircurve</code>
<code>to</code>	"forward" or "spot"

Value

An object of class `ircurve` with changed type.

Examples

```
my_ircurve <- as_ircurve(c(0.1, 0.2, 0.3), type = "spot")
change_type(my_ircurve, to = "forward")
```

compare

Compare two tables

Description

Returns the effect of comparison of the two tables. It gets common columns and number of rows of the two tables. In case of type mismatches, it coerces the weaker type into a stronger type. The output contains the absolute difference for numerical values and the `_same/different` for characters.

Usage

```
compare(x, y)
```

Arguments

x the first data frame
y the second data frame

Value

data frame

Examples

```
x <- data.frame(
  a = rep(1, 3),
  b = rep(2, 3)
)
y <- data.frame(
  a = rep(2, 3),
  b = rep(2, 3)
)
compare(x, y)
```

dref_fdom	<i>First day of a month</i>
-----------	-----------------------------

Description

Returns the first day of a month in reference to the base date.

Usage

```
dref_fdom(date)
```

Arguments

date	base date in format YYYY-MM-DD
------	--------------------------------

Value

date

Examples

```
dref_fdom("2020-09-21")
```

dref_fdoq	<i>First day of a quarter</i>
-----------	-------------------------------

Description

Returns the first day of a quarter in reference to the base date.

Usage

```
dref_fdoq(date)
```

Arguments

date	base date in format YYYY-MM-DD
------	--------------------------------

Value

date

Examples

```
dref_fdoq("2020-09-21")
```

dref_fdoy	<i>First day of an year</i>
-----------	-----------------------------

Description

Returns the first day of a year in reference to the base date.

Usage

```
dref_fdoy(date)
```

Arguments

date	base date in format YYYY-MM-DD
------	--------------------------------

Value

date

Examples

```
dref_fdoy("2020-09-21")
```

dref_fwdom	<i>First working day of a month</i>
------------	-------------------------------------

Description

Returns the first working day of a month in reference to the base date.

Usage

```
dref_fwdom(date)
```

Arguments

date	base date in format YYYY-MM-DD
------	--------------------------------

Value

date

Examples

```
dref_fwdom("2020-11-21")
```

dref_fwdoq	<i>First working day of a quarter</i>
------------	---------------------------------------

Description

Returns the first working day of a quarter in reference to the base date.

Usage

```
dref_fwdoq(date)
```

Arguments

date	base date in format YYYY-MM-DD
------	--------------------------------

Value

date

Examples

```
dref_fwdoq("2020-09-21")
```

dref_fwdoq	<i>First working day of a year</i>
------------	------------------------------------

Description

Returns the first working day of a year in reference to the base date.

Usage

```
dref_fwdoq(date)
```

Arguments

date	base date in format YYYY-MM-DD
------	--------------------------------

Value

date

Examples

```
dref_fwdoq("2022-09-21")
```

dref_ldom	<i>Last day of a month</i>
-----------	----------------------------

Description

Returns the last day of a month in reference to the base date.

Usage

```
dref_ldom(date)
```

Arguments

date	base date in format YYYY-MM-DD
------	--------------------------------

Value

date

Examples

```
dref_ldom("2020-09-21")
```

dref_ldoq	<i>Last day of a quarter</i>
-----------	------------------------------

Description

Returns the last day of a month in reference to the base date.

Usage

```
dref_ldoq(date)
```

Arguments

date	base date in format YYYY-MM-DD
------	--------------------------------

Value

date

Examples

```
dref_ldoq("2020-09-21")
```

dref_ldoy	<i>Last day of an year</i>
-----------	----------------------------

Description

Returns the last day of a year in reference to the base date.

Usage

```
dref_ldoy(date)
```

Arguments

date	base date in format YYYY-MM-DD
------	--------------------------------

Value

date

Examples

```
dref_ldoy("2020-09-21")
```

dref_lwdom	<i>Last working day of a month</i>
------------	------------------------------------

Description

Returns the last working day of a month in reference to the base date.

Usage

```
dref_lwdom(date)
```

Arguments

date	base date in format YYYY-MM-DD
------	--------------------------------

Value

date

Examples

```
dref_lwdom("2020-10-21")
```

dref_lwdoq *Last working day of a quarter*

Description

Returns the last working day of a quarter in reference to the base date.

Usage

```
dref_lwdoq(date)
```

Arguments

date base date in format YYYY-MM-DD

Value

date

Examples

```
dref_lwdoq("2020-09-21")
```

dref_lwdoy *Last working day of an year*

Description

Returns the last working day of a year in reference to the base date.

Usage

```
dref_lwdoy(date)
```

Arguments

date base date in format YYYY-MM-DD

Value

date

Examples

```
dref_lwdoy("2022-09-21")
```

dref_mtd	<i>Month to date</i>
----------	----------------------

Description

Returns the last day of the previous month.

Usage

```
dref_mtd(date)
```

Arguments

date	base date in format YYYY-MM-DD
------	--------------------------------

Value

date

Examples

```
dref_mtd("2020-09-21")
```

dref_qtd	<i>Quarter to date</i>
----------	------------------------

Description

Returns the last day of the previous quarter.

Usage

```
dref_qtd(date)
```

Arguments

date	base date in format YYYY-MM-DD
------	--------------------------------

Value

date

Examples

```
dref_qtd("2020-09-21")
```

dref_ytd *Year to date*

Description

Returns the last day of the previous year.

Usage

```
dref_ytd(date)
```

Arguments

date base date in format YYYY-MM-DD

Value

date

Examples

```
dref_ytd("2020-09-21")
```

print.ircurve *Print ircurve*

Description

Print ircurve

Usage

```
## S3 method for class 'ircurve'  
print(x, ...)
```

Arguments

x an object of class ircurve
... further arguments passed to or from other methods

Value

Prints the interest rates curve.

Examples

```
my_ircurve <- as_ircurve(c(0.022, 0.018))  
print(my_ircurve)
```

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