Package 'eiopaR'

October 13, 2022

Title Access to RFR (Risk-Free Rate) Curves Produced by the EIOPA

Version 0.1.1

Description Provides EIOPA (European Insurance And Occupational Pensions Authority) risk-
free rates. Please note that the author of this package is not affiliated with EIOPA. The data is ac-
cessed through a REST API available at <https://mehdiechchelh.com/api/>.

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Encoding UTF-8

Imports httr, jsonlite, curl,

RoxygenNote 7.1.1

Collate 'const.R' 'api.R' 'eiopaR.R' 'utils.R'

Suggests testthat (>= 3.0.0)

Config/testthat/edition 3

NeedsCompilation no

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Repository CRAN

Date/Publication 2021-05-31 07:20:12 UTC

R topics documented:

API_BASE_URL   *Base URL to the API.*

Description

Base URL to the API.

Usage

```
API_BASE_URL()
```

Value

A string: the base URL to the API.

---

api_get   *This function is a helper to make get requests to the API.*

Description

This function is a helper to make get requests to the API.

Usage

```
api_get(path)
```

Arguments

path   the path to an endpoint of the API

Value

A list of class "eiopaR_api". It has at least the following components:

content the JSON content parsed to a list.

path the path to the requested endpoint.

response the raw response.

---

get_options   *Options available*

Description

Returns the available options for a specific field.

Usage

```
get_options(field)
```

Arguments

field   a string like "region", "year" or "month"

Value

A vector of type "character": the list of the available options for field.

Examples

```
## Not run:
get_options("region")

## End(Not run)
```

---

get_rfr   *Query EIOPA risk-free rate (RFR).*

Description

This function query and returns the EIOPA risk-free interest rate term structures from an API.

Note: this function is getting the data from an API. Your IP can be temporary or permanently blocked if too many queries are executed.

For optimal performance, we recommend to limit the number of calls to this function.

EIOPA website : https://www.eiopa.europa.eu/tools-and-data/risk-free-interest-rate-term-structures_en

Usage

```
get_rfr(
  type = options_rfr_types(),
  region,
  year = NULL,
  month = NULL,
  format = c("data.frame")
)
```

Arguments

`type`	the type of the risk-free rate, see `options_rfr_types()` for the different options (examples: "with_va", "no_va").
`region`	the region to query (examples: "FR". see `get_options("region")`).
`year`	the year of the RFR.
`month`	the month of the RFR.
`format`	the format for the output data. Currently the only option is "data.frame".

Value

A list of class "eiopa_rfr", with components:

data a data.frame containing the risk-free rate curves.

metadata a data.frame containing metadata about the risk-free rate curves.

See Also

get_rfr_with_va, get_rfr_no_va

Examples

```
## Not run:
get_rfr("with_va", "FR", 2019, 12)
get_rfr("no_va", "FR", c(2016, 2019), 12)

## End(Not run)
```

---

get_rfr_no_va   *Query EIOPA RFR without volatility adjustment*

Description

This function query and returns the EIOPA risk-free interest rate term structures from an API.

Note: this function is getting the data from an API. Your IP can be temporary or permanently blocked if too many queries are executed.

For optimal performance, we recommend to limit the number of calls to this function.

EIOPA website : https://www.eiopa.europa.eu/tools-and-data/risk-free-interest-rate-term-structures_en

Usage

```
get_rfr_no_va(region, year = NULL, month = NULL, format = c("data.frame"))
```

Arguments

region	the region to query (examples: "FR". see `get_options("region")`).
year	the year of the RFR.
month	the month of the RFR.
format	the format for the output data. Currently the only option is "data.frame".

Value

A list of class "eiopa_rfr", with at least the following components:

data a data.frame containing the risk-free rate curves.

metadata a data.frame containing metadata about the risk-free rate curves.

See Also

get_rfr, get_rfr_with_va

Examples

```
## Not run:
get_rfr_no_va("FR", 2019, 12)
get_rfr_no_va("BE", 2020, 11)

## End(Not run)
```

---

get_rfr_with_va	*Query EIOPA RFR with volatility adjustment.*

Description

This function query and returns the EIOPA risk-free interest rate term structures from an API.

Note: this function is getting the data from an API. Your IP can be temporary or permanently blocked if too many queries are executed.

For optimal performance, we recommend to limit the number of calls to this function.

EIOPA website : https://www.eiopa.europa.eu/tools-and-data/risk-free-interest-rate-term-structures_en

Usage

```
get_rfr_with_va(region, year = NULL, month = NULL, format = c("data.frame"))
```

Arguments

region	the region to query (examples: "FR". see `get_options("region")`).
year	the year of the RFR.
month	the month of the RFR.
format	the format for the output data. Currently the only option is "data.frame".

Value

A list of class "eiopa_rfr", with components:

data a data.frame containing the risk-free rate curves.

metadata a data.frame containing metadata about the risk-free rate curves.

See Also

get_rfr, get_rfr_no_va

Examples

```
## Not run:
get_rfr_with_va("FR", 2019, 12)
get_rfr_with_va("BE", 2020, 11)

## End(Not run)
```

---

options_rfr_types   *Available curves*

Description

This function returns a list of the available options for the risk-free-rates curves. (see argument "type" for get_rfr)

Usage

```
options_rfr_types()
```

Value

vector of strings: the different options available.

See Also

get_rfr

Examples

```
options_rfr_types()
```

---

parse_rfr *Parse the risk free rates API response*

Description

This function is used to parse data received from the API to various formats.

Usage

```
parse_rfr(resp, format)
```

Arguments

resp	A response from the API (status 200, type/JSON). The response should have a "data" keyword with the value of an array containing the risk free rates.
format	One of the output format ("data.frame" is currently the only option).

Value

A list of class "eiopa_rfr", with at least the following components:

data a data.frame containing the risk-free rate curves.

metadata a data.frame containing metadata about the risk-free rate curves.

---

parse_rfr_to_df *Parse the risk free rates API response into a dataframe*

Description

This function is used to parse data received from the API into data.frame.

Usage

```
parse_rfr_to_df(resp)
```

Arguments

resp	A response from the API (status 200, type/JSON). The response should have a "data" keyword with the value of an array containing the risk free rates.

Value

A list of class "eiopa_rfr", with at least the following components:

data a data.frame containing the risk-free rate curves.

metadata a data.frame containing metadata about the risk-free rate curves.

PATH_GET_OPTIONS   *Build path to the options endpoint.*

Description

Build path to the options endpoint.

Usage

```
PATH_GET_OPTIONS(field)
```

Arguments

field	the field name for the endpoint giving the available options

Value

A string: the path to the options endpoint.

PATH_GET_RFR   *Build path to the RFR (risk-free rate) endpoint.*

Description

Build path to the RFR (risk-free rate) endpoint.

Usage

```
PATH_GET_RFR(type, region, params)
```

Arguments

type	one of the types available by the API (see options_rfr_types())
region	one of the regions available by the API (see get_options("region"))
params	additional GET parameters

Value

A string: the path to the RFR endpoint.

---

print.eiopa_rfr *Print eiopa_rfr object*

Description

Print eiopa_rfr object in a readable format

Usage

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

Arguments

x	a response from the API
...	further arguments passed to or from other methods.

Value

An instance of class "eiopa_rfr". It is a list with at least the following components:

data a data.frame containing the risk-free rate curves.

metadata a data.frame containing metadata about the risk-free rate curves.

Examples

```
## Not run:
resp <- get_rfr_with_va("FR", 2019, 11)
print(resp)

## End(Not run)
```

---

try_GET *Wrapper for GET requests*

Description

Wrapper for GET requests

Usage

```
try_GET(x, ...)
```

Arguments

x	the url to request
...	additional parameters passed to the GET function.

Value

The result of the GET request.

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