

# Package: eiopaR (via r-universe)

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**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 accessed through a REST API available at <https://mehdiechelh.com/api/>.

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**Repository** <https://mehdiechelh.r-universe.dev>

**RemoteUrl** <https://github.com/mehdiechelh/eiopaR>

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API_BASE_URL	<i>Base URL to the API.</i>
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### Description

Base URL to the API.

### Usage

API\_BASE\_URL()

### Value

A string: the base URL to the API.

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api_get	<i>This function is a helper to make get requests to the API.</i>
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### 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	<i>Options available</i>
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**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	<i>Query EIOPA risk-free rate (RFR).</i>
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---

**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](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](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	<i>Query EIOPA RFR with volatility adjustment.</i>
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---

**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](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	<i>Available curves</i>
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---

**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	<i>Parse the risk free rates API response</i>
-----------	---

---

### 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	<i>Parse the risk free rates API response into a dataframe</i>
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---

### 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.

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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.
```

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*try\_GET*

**Value**

The result of the GET request.

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