

# Package ‘bbk’

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**Title** Client for Central Bank APIs

**Version** 0.6.0

**Description** A client for retrieving data and metadata from major central bank APIs. It supports access to the 'Bundesbank SDMX Web Service API' (<<https://www.bundesbank.de/en/statistics/time-series-databases/help-for-sdmx-web-service/web-service-interface-data>>), the 'Swiss National Bank Data Portal' (<<https://data.snb.ch/en>>), and the 'European Central Bank Data Portal API' (<<https://data.ecb.europa.eu/help/api/overview>>).

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**URL** <https://m-muecke.github.io/bbk/>, <https://github.com/m-muecke/bbk>

**BugReports** <https://github.com/m-muecke/bbk/issues>

**Depends** R (>= 4.1.0)

**Imports** curl, data.table (>= 1.16.0), httr2 (>= 1.0.0), jsonlite, stats, utils, xml2

**Suggests** ggplot2, scales, testthat (>= 3.0.0)

**Config/testthat/edition** 3

**Encoding** UTF-8

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**NeedsCompilation** no

**Author** Maximilian Mücke [aut, cre] (<<https://orcid.org/0009-0000-9432-9795>>)

**Maintainer** Maximilian Mücke <muecke.maximilian@gmail.com>

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bbk_data	<i>Returns Bundesbank data for a given flow and key</i>
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## Description

Returns Bundesbank data for a given flow and key

## Usage

```
bbk_data(
  flow,
  key = NULL,
  start_period = NULL,
  end_period = NULL,
  first_n = NULL,
  last_n = NULL
)
```

## Arguments

flow	(character(1)) flow to query, 5-8 characters. See <a href="#">bbk_metadata()</a> for available dataflows.
key	(character(1)) key to query.
start_period	(character(1)) start date of the data. Supported formats: <ul style="list-style-type: none"> <li>• YYYY for annual data (e.g., "2019")</li> <li>• YYYY-S[1-2] for semi-annual data (e.g., "2019-S1")</li> <li>• YYYY-Q[1-4] for quarterly data (e.g., "2019-Q1")</li> <li>• YYYY-MM for monthly data (e.g., "2019-01")</li> <li>• YYYY-W[01-53] for weekly data (e.g., "2019-W01")</li> <li>• YYYY-MM-DD for daily and business data (e.g., "2019-01-01") If NULL, no start date restriction is applied (data retrieved from the earliest available date). Default NULL.</li> </ul>
end_period	(character(1)) end date of the data, in the same format as start_period. If NULL, no end date restriction is applied (data retrieved up to the most recent available date). Default NULL.
first_n	(numeric(1)) number of observations to retrieve from the start of the series. If NULL, no restriction is applied. Default NULL.
last_n	(numeric(1)) number of observations to retrieve from the end of the series. If NULL, no restriction is applied. Default NULL.

**Value**

A `data.table::data.table()` with the requested data.

**Source**

<https://www.bundesbank.de/en/statistics/time-series-databases/help-for-sdmx-web-service/web-service-interface-data>

**See Also**

Other data: `bbk_series()`, `ecb_data()`, `snb_data()`

**Examples**

```
# fetch all data for a given flow and key
bbk_data("BBSIS", "D.I.ZAR.ZI.EUR.S1311.B.A604.R10XX.R.A.A._Z._Z.A")
# fetch data for multiple keys
bbk_data("BBEX3", c("M.ISK.EUR", "USD.CA.AC.A01"))
# specified period (start date-end date) for daily data
bbk_data(
  "BBSIS", "D.I.ZAR.ZI.EUR.S1311.B.A604.R10XX.R.A.A._Z._Z.A",
  start_period = "2020-01-01",
  end_period = "2020-08-01"
)
# or only specify the start date
bbk_data(
  "BBSIS", "D.I.ZAR.ZI.EUR.S1311.B.A604.R10XX.R.A.A._Z._Z.A",
  start_period = "2024-04-01"
)
```

---

bbk\_metadata

*Returns the available Bundesbank metadata*

---

**Description**

Retrieval of the metadata stored in the Bundesbank's time series database. Access via the SDMX Web Service API of the Bundesbank.

**Usage**

```
bbk_metadata(type, id = NULL, lang = c("en", "de"))
```

**Arguments**

type (character(1)) the type of metadata to query. One of: "datastructure", "dataflow", "codelist", or "concept".

id (character(1)) id to query. Default NULL.

lang (character(1)) language to query, either "en" or "de". Default "en".

**Value**

A `data.table::data.table()` with the queried metadata. The columns are:

id The id of the metadata

name The name of the metadata

**Source**

<https://www.bundesbank.de/en/statistics/time-series-databases/help-for-sdmx-web-service/web-service-interface-metadata>

**See Also**

Other metadata: `ecb_metadata()`

**Examples**

```
bbk_metadata("datastructure")
bbk_metadata("dataflow", "BBSIS")
bbk_metadata("codelist", "CL_BBK_ACIP_ASSET_LIABILITY")
bbk_metadata("concept", "CS_BBK_BSPL")
```

---

bbk_series	<i>Returns the Bundesbank time serie that is found with the specified time series key</i>
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**Description**

Returns the Bundesbank time serie that is found with the specified time series key

**Usage**

```
bbk_series(key)
```

**Arguments**

key (character(1)) key to query.

**Value**

A `data.table::data.table()` with the requested data.

**Source**

<https://www.bundesbank.de/en/statistics/time-series-databases/help-for-sdmx-web-service/web-service-interface-data>

**See Also**

`bbk_data()` for an endpoint with more options.

Other data: `bbk_data()`, `ecb_data()`, `snb_data()`

**Examples**

```
bbk_series("BBEX3.M.DKK.EUR.BB.AC.A01")
bbk_series("BBAF3.Q.F41.S121.DE.S1.W0.LE.N._X.B")
bbk_series("BBBK11.D.TTA000")
```

---

ecb\_data

*Returns ECB data for a given flow and key*

---

**Description**

Returns ECB data for a given flow and key

**Usage**

```
ecb_data(
  flow,
  key = NULL,
  start_period = NULL,
  end_period = NULL,
  first_n = NULL,
  last_n = NULL
)
```

**Arguments**

`flow` (character(1)) flow to query.

`key` (character(1)) key to query.

`start_period` (character(1)) start date of the data. Supported formats:

- YYYY for annual data (e.g., "2019")

- YYYY-S[1-2] for semi-annual data (e.g., "2019-S1")
- YYYY-Q[1-4] for quarterly data (e.g., "2019-Q1")
- YYYY-MM for monthly data (e.g., "2019-01")
- YYYY-W[01-53] for weekly data (e.g., "2019-W01")
- YYYY-MM-DD for daily and business data (e.g., "2019-01-01") If NULL, no start date restriction is applied (data retrieved from the earliest available date). Default NULL.

end_period	(character(1)) end date of the data, in the same format as start_period. If NULL, no end date restriction is applied (data retrieved up to the most recent available date). Default NULL.
first_n	(numeric(1)) number of observations to retrieve from the start of the series. If NULL, no restriction is applied. Default NULL.
last_n	(numeric(1)) number of observations to retrieve from the end of the series. If NULL, no restriction is applied. Default NULL.

**Source**

<https://data.ecb.europa.eu/help/api/data>

**See Also**

Other data: [bbk\\_data\(\)](#), [bbk\\_series\(\)](#), [snb\\_data\(\)](#)

**Examples**

```
# fetch US dollar/Euro exchange rate
ecb_data("EXR", "D.USD.EUR.SP00.A")
# fetch data for multiple keys
ecb_data("EXR", c("D.USD", "JPY.EUR.SP00.A"))
```

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ecb_euro_rates	<i>Euro foreign exchange reference rates</i>
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**Description**

Fetch the latest or historical Euro foreign exchange reference rates from the European Central Bank.

**Usage**

```
ecb_euro_rates(x = c("latest", "history"))
```

**Arguments**

x (character(1)) one of "latest" or "history". Default "latest".

## Details

Note you can achieve the same by calling the `ecb_data()` function with the right parameters for each currency.

The reference rates are usually updated at around 16:00 CET every working day, except on **TARGET closing days**.

They are based on the daily concertation procedure between central banks across Europe, which normally takes place around 14:10 CET. The reference rates are published for information purposes only. Using the rates for transaction purposes is strongly discouraged.

## Value

A `data.table::data.table()` with the reference rates.

## Source

[https://www.ecb.europa.eu/stats/policy\\_and\\_exchange\\_rates/euro\\_reference\\_exchange\\_rates/html/index.en.html](https://www.ecb.europa.eu/stats/policy_and_exchange_rates/euro_reference_exchange_rates/html/index.en.html)

## Examples

```
ecb_euro_rates()
```

---

ecb\_metadata

*Returns the available ECB metadata*

---

## Description

Retrieval of the metadata stored in the ECB's time series database. Access via the SDMX Web Service API of the ECB

## Usage

```
ecb_metadata(type, agency = NULL, id = NULL)
```

## Arguments

type	(character(1)) the type of metadata to query. One of: "datastructure", "dataflow", "codelist", or "concept".
agency	(character(1)) id of the agency to query. Default NULL.
id	(character(1)) id of the resource to query. Default NULL.

**Value**

A `data.table::data.table()` with the queried metadata. The columns are:

agency	The agency of the metadata
id	The id of the metadata
name	The name of the metadata

**Source**

<https://data.ecb.europa.eu/help/api/metadata>

**See Also**

Other metadata: `bbk_metadata()`

**Examples**

```
ecb_metadata("datastructure")
ecb_metadata("datastructure", "ECB")
ecb_metadata("datastructure", "ECB", "ECB_EXR1")
ecb_metadata("datastructure", id = "ECB_EXR1")
```

---

snb\_data

*Returns Swiss National Bank (SNB) data for a given id*

---

**Description**

Returns Swiss National Bank (SNB) data for a given id

**Usage**

```
snb_data(id, start_date = NULL, end_date = NULL, lang = c("en", "de"))
```

**Arguments**

id	(character(1)) id of the time series.
start_date	(character(1)   Date(1)) start date of the time series.
end_date	(character(1)   Date(1)) end date of the time series.
lang	(character(1)) language to query, either "en" or "de". Default "en".

**Value**

A `data.table::data.table()` with the requested data.



**Source**

<https://data.snb.ch/en>

**See Also**

Other data: [bbk\\_data\(\)](#), [bbk\\_series\(\)](#), [ecb\\_data\(\)](#)

**Examples**

```
snb_data("rendopar")  
# or filter for date range  
snb_data("rendopar", "2020-01-01", "2020-12-31")
```

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