Package 'readecb'

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Title Access 'European Central Bank' Data

Version 0.1.4

Description Provides clean, tidy access to statistical data published by the 'European Central Bank' ('ECB') via the 'ECB Data Portal' API <https://data.ecb.europa.eu>. Covers policy interest rates, 'EURIBOR', euro exchange rates, harmonised consumer price inflation ('HICP'), euro area yield curves, the euro short-term rate ('ESTR'), monetary aggregates (M1, M2, M3), mortgage and lending rates, GDP, unemployment, and government debt-to-GDP. Each dataset has a dedicated function that abstracts away the underlying 'SDMX' key structure, so users do not need to know series codes. A generic fetcher is also provided for direct access to any of the 'ECB' 100-plus dataflows. Data is downloaded on first use and cached locally for subsequent calls.

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BugReports https://github.com/charlescoverdale/readecb/issues

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`clear_cache` *Clear the readecb cache*

Description

Deletes all locally cached ECB data files. The next call to any data function will re-download from the ECB Data Portal.

Usage

```
clear_cache()
```

Value

Invisible `NULL`.

See Also

Other data access: `ecb_get()`, `ecb_yield_curve()`, `list_ecb_dataflows()`

Examples

```
op <- options(readecb.cache_dir = tempdir())
clear_cache()
options(op)
```

ecb_estr *Euro short-term rate (ESTR)*

Description

Returns the euro short-term rate, the ECB's benchmark overnight interest rate that replaced EONIA.

Usage

```
ecb_estr(from = NULL, to = NULL, cache = TRUE)
```

Arguments

from	Optional start date.
to	Optional end date.
cache	Logical. Use cached data if available (default TRUE).

Value

A data frame with columns:

date Date.

value Numeric. Rate in percent.

See Also

Other interest rates: ecb_euribor(), ecb_policy_rates()

Examples

```
op <- options(readecb.cache_dir = tempdir())
try({
  ecb_estr(from = "2024-01")
})
options(op)
```

ecb_euribor *EURIBOR interbank lending rates*

Description

Returns EURIBOR (Euro Interbank Offered Rate) at one or more tenors. EURIBOR is the benchmark rate at which euro area banks lend to each other, widely used as a reference rate for mortgages, loans, and derivatives.

Usage

```
ecb_euribor(tenor = "3M", from = NULL, to = NULL, cache = TRUE)
```

Arguments

tenor	One or more of "1M" (1 month), "3M" (default), "6M", or "12M".
from	Optional start date.
to	Optional end date.
cache	Logical. Use cached data if available (default TRUE).

Value

A data frame with columns:

date Date.

tenor Character. EURIBOR maturity.

value Numeric. Rate in percent per annum.

See Also

Other interest rates: ecb_estr(), ecb_policy_rates()

Examples

```
op <- options(readecb.cache_dir = tempdir())
try({
  ecb_euribor("3M", from = "2022-01")
  ecb_euribor(c("1M", "3M", "6M", "12M"), from = "2024-01")
})
options(op)
```

ecb_exchange_rate *Euro exchange rates*

Description

Returns ECB reference exchange rates for one or more currencies against the euro.

Usage

```
ecb_exchange_rate(
  currency = "USD",
  frequency = c("monthly", "daily"),
  from = NULL,
  to = NULL,
  cache = TRUE
)
```

Arguments

currency	Character vector of ISO 4217 currency codes (e.g. "USD", "GBP"). Use list_exchange_rates() to see available currencies.
frequency	One of "monthly" (default) or "daily".
from	Optional start date.
to	Optional end date.
cache	Logical. Use cached data if available (default TRUE).

Value

A data frame with columns:

date Date.

currency Character. ISO currency code.

value Numeric. Units of foreign currency per euro.

See Also

Other exchange rates: list_exchange_rates()

Examples

```
op <- options(readecb.cache_dir = tempdir())
try({
  ecb_exchange_rate("USD", from = "2024-01")
  ecb_exchange_rate(c("USD", "GBP", "JPY"), from = "2024-01")
})
options(op)
```

ecb_gdp *Euro area GDP*

Description

Returns quarterly real GDP for the euro area from the ECB's national accounts dataset (MNA).

Usage

```
ecb_gdp(from = NULL, to = NULL, cache = TRUE)
```

Arguments

from	Optional start date.
to	Optional end date.
cache	Logical. Use cached data if available (default TRUE).

Value

A data frame with columns:

date Date. First day of the quarter.

value Numeric. GDP in millions of euros (chain-linked volumes).

See Also

Other macro: ecb_government_debt(), ecb_unemployment()

Examples

```
op <- options(readecb.cache_dir = tempdir())
try({
  ecb_gdp(from = "2020")
})
options(op)
```

ecb_get *Fetch any ECB dataflow*

Description

A generic fetcher for direct access to any of the ECB's dataflows. Use `list_ecb_dataflows()` to discover available dataflows.

Usage

```
ecb_get(dataflow, key, from = NULL, to = NULL, cache = TRUE)
```

Arguments

`dataflow`	Character. The dataflow identifier (e.g. `"EXR"`, `"FM"`).
`key`	Character. The SDMX dimension key (e.g. `"M.USD.EUR.SP00.A"`).
`from`	Optional start date.
`to`	Optional end date.
`cache`	Logical. Use cached data if available (default `TRUE`).

Value

A data frame. Columns vary by dataflow but always include `TIME_PERIOD` and `OBS_VALUE`.

See Also

Other data access: `clear_cache()`, `ecb_yield_curve()`, `list_ecb_dataflows()`

Examples

```
op <- options(readecb.cache_dir = tempdir())
try({
  # Fetch EUR/USD monthly exchange rate
  ecb_get("EXR", "M.USD.EUR.SP00.A", from = "2024-01")
})
options(op)
```

`ecb_government_debt` *Euro area government debt-to-GDP ratio*

Description

Returns the annual general government consolidated gross debt as a percentage of GDP for the euro area, from the ECB's government finance statistics dataset (GFS).

Usage

```
ecb_government_debt(from = NULL, to = NULL, cache = TRUE)
```

Arguments

`from`	Optional start date (year, e.g. `"2000"`).
`to`	Optional end date.
`cache`	Logical. Use cached data if available (default `TRUE`).

Value

A data frame with columns:

date Date. 1 January of each year.

value Numeric. Government debt as a percentage of GDP.

See Also

Other macro: `ecb_gdp()`, `ecb_unemployment()`

Examples

```
op <- options(readecb.cache_dir = tempdir())
try({
  ecb_government_debt(from = "2000")
})
options(op)
```

ecb_hicp *Harmonised Index of Consumer Prices (HICP)*

Description

Returns HICP inflation data for one or more euro area countries or country groups. The default is the euro area aggregate (`"U2"`).

Usage

```
ecb_hicp(
  country = "U2",
  measure = c("annual_rate", "index", "monthly_rate"),
  from = NULL,
  to = NULL,
  cache = TRUE
)
```

Arguments

`country`	Character vector of country codes. Use `"U2"` for the euro area aggregate, or ISO 2-letter codes such as `"DE"` (Germany), `"FR"` (France), `"IT"` (Italy), `"ES"` (Spain).
`measure`	One of: • `"annual_rate"` (default) – year-on-year percentage change • `"index"` – index level (2015 = 100) • `"monthly_rate"` – month-on-month percentage change
`from`	Optional start date.
`to`	Optional end date.
`cache`	Logical. Use cached data if available (default `TRUE`).

Value

A data frame with columns:

date Date.

country Character. Country or area code.

value Numeric. Inflation rate or index level.

Examples

```
op <- options(readecb.cache_dir = tempdir())
try({
  ecb_hicp(from = "2020-01")
  ecb_hicp(c("DE", "FR", "IT"), from = "2023-01")
})
```

```
options(op)
```

`ecb_lending_rates` *Lending interest rates to non-financial corporations*

Description

Returns the composite cost-of-borrowing indicator for loans to non-financial corporations in the euro area or a specific country.

Usage

```
ecb_lending_rates(country = "U2", from = NULL, to = NULL, cache = TRUE)
```

Arguments

`country`	Character. Country code: `"U2"` for the euro area aggregate (default), or an ISO 2-letter code such as `"DE"`, `"FR"`, `"IT"`, `"ES"`.
`from`	Optional start date.
`to`	Optional end date.
`cache`	Logical. Use cached data if available (default `TRUE`).

Value

A data frame with columns:

date Date.

country Character. Country or area code.

value Numeric. Interest rate in percent per annum.

See Also

Other credit: `ecb_money_supply()`, `ecb_mortgage_rates()`

Examples

```
op <- options(readecb.cache_dir = tempdir())
try({
  ecb_lending_rates(from = "2015-01")
})
options(op)
```

`ecb_money_supply` *Euro area monetary aggregates*

Description

Returns outstanding amounts for M1, M2, or M3 monetary aggregates in the euro area.

Usage

```
ecb_money_supply(
  aggregate = c("M3", "M2", "M1"),
  from = NULL,
  to = NULL,
  cache = TRUE
)
```

Arguments

`aggregate`	One of `"M3"` (default), `"M2"`, or `"M1"`.
`from`	Optional start date.
`to`	Optional end date.
`cache`	Logical. Use cached data if available (default `TRUE`).

Value

A data frame with columns:

date Date.

value Numeric. Outstanding amount in millions of euros.

See Also

Other credit: `ecb_lending_rates()`, `ecb_mortgage_rates()`

Examples

```
op <- options(readecb.cache_dir = tempdir())
try({
  ecb_money_supply("M3", from = "2020-01")
})
options(op)
```

`ecb_mortgage_rates` *Mortgage interest rates*

Description

Returns the composite cost-of-borrowing indicator for house purchase loans in the euro area or a specific country.

Usage

```
ecb_mortgage_rates(country = "U2", from = NULL, to = NULL, cache = TRUE)
```

Arguments

`country`	Character. Country code: `"U2"` for the euro area aggregate (default), or an ISO 2-letter code such as `"DE"`, `"FR"`, `"IT"`, `"ES"`.
`from`	Optional start date.
`to`	Optional end date.
`cache`	Logical. Use cached data if available (default `TRUE`).

Value

A data frame with columns:

date Date.

country Character. Country or area code.

value Numeric. Interest rate in percent per annum.

See Also

Other credit: `ecb_lending_rates()`, `ecb_money_supply()`

Examples

```
op <- options(readecb.cache_dir = tempdir())
try({
  ecb_mortgage_rates(from = "2015-01")
})
options(op)
```

`ecb_policy_rates` *ECB policy interest rates*

Description

Returns the three main ECB policy rates: the main refinancing operations rate, the deposit facility rate, and the marginal lending facility rate.

Usage

```
ecb_policy_rates(from = NULL, to = NULL, cache = TRUE)
```

Arguments

`from`	Optional start date (e.g. `"2020"` or `"2020-01"`).
`to`	Optional end date.
`cache`	Logical. Use cached data if available (default `TRUE`).

Value

A data frame with columns:

date Date.

rate Character. One of `"Main refinancing rate"`, `"Deposit facility rate"`, or `"Marginal lending rate"`.

value Numeric. Rate in percent per annum.

See Also

Other interest rates: `ecb_estr()`, `ecb_euribor()`

Examples

```
op <- options(readecb.cache_dir = tempdir())
try({
  ecb_policy_rates(from = "2022-01")
})
options(op)
```

`ecb_unemployment` *Euro area unemployment rate*

Description

Returns the monthly harmonised unemployment rate for the euro area from the ECB's labour force statistics dataset (LFSI).

Usage

```
ecb_unemployment(from = NULL, to = NULL, cache = TRUE)
```

Arguments

`from`	Optional start date.
`to`	Optional end date.
`cache`	Logical. Use cached data if available (default `TRUE`).

Value

A data frame with columns:

date Date.

value Numeric. Unemployment rate as a percentage.

See Also

Other macro: `ecb_gdp()`, `ecb_government_debt()`

Examples

```
op <- options(readecb.cache_dir = tempdir())
try({
  ecb_unemployment(from = "2020-01")
})
options(op)
```

ecb_yield_curve *Euro area government bond yield curve*

Description

Returns AAA-rated euro area government bond yields for one or more tenors.

Usage

```
ecb_yield_curve(tenor = "10Y", from = NULL, to = NULL, cache = TRUE)
```

Arguments

tenor	Character vector of tenors. Common values: "3M", "6M", "1Y", "2Y", "3Y", "5Y", "7Y", "10Y", "15Y", "20Y", "30Y". Default is "10Y".
from	Optional start date.
to	Optional end date.
cache	Logical. Use cached data if available (default TRUE).

Value

A data frame with columns:

date Date.

tenor Character. Bond maturity.

value Numeric. Yield in percent per annum.

See Also

Other data access: clear_cache(), ecb_get(), list_ecb_dataflows()

Examples

```
op <- options(readecb.cache_dir = tempdir())
try({
  ecb_yield_curve("10Y", from = "2023-01")
  ecb_yield_curve(c("2Y", "10Y"), from = "2022-01")
})
options(op)
```

list_ecb_dataflows *List available ECB dataflows*

Description

Fetches the full list of dataflows from the ECB Data Portal. Each dataflow corresponds to a dataset that can be queried with `ecb_get()`.

Usage

```
list_ecb_dataflows(cache = TRUE)
```

Arguments

cache	Logical. Use cached data if available (default TRUE).

Value

A data frame with columns:

dataflow_id Character. The dataflow identifier.

name Character. Human-readable name.

See Also

Other data access: `clear_cache()`, `ecb_get()`, `ecb_yield_curve()`

Examples

```
op <- options(readecb.cache_dir = tempdir())
try({
  list_ecb_dataflows()
})
options(op)
```

list_exchange_rates *List available exchange rate currencies*

Description

Returns a data frame of ISO 4217 currency codes for which the ECB publishes reference exchange rates. No network call is made.

Usage

```
list_exchange_rates()
```

Value

A data frame with columns:

code Character. ISO 4217 currency code.

currency Character. Currency name.

See Also

Other exchange rates: `ecb_exchange_rate()`

Examples

```
list_exchange_rates()
```

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