

Package ‘RJSDMX’

October 12, 2022

Version 2.3-3.1

Title R Interface to SDMX Web Services

Author Attilio Mattiocco, Diana Nicoletti, Gianpaolo Lopez, Banca d'Italia

Maintainer Attilio Mattiocco <attilio.mattiocco@bancaditalia.it>

Description Provides functions to retrieve data and metadata from providers that disseminate data by means of SDMX web services. SDMX (Statistical Data and Metadata eXchange) is a standard that has been developed with the aim of simplifying the exchange of statistical information. More about the SDMX standard and the SDMX Web Services can be found at: <<https://sdmx.org>>.

Depends R (>= 3.0.0), rJava (>= 0.8-8), zoo (>= 1.6-4)

SystemRequirements Java (>= 7)

License EUPL

URL <https://github.com/amattioc/SDMX/>

BugReports <https://github.com/amattioc/SDMX/issues>

Copyright Banca d'Italia

NeedsCompilation no

Repository CRAN

Date/Publication 2022-06-08 16:54:18 UTC

R topics documented:

| | |
|------------------|---|
| RJSDMX-package | 2 |
| addLocalProvider | 3 |
| addProvider | 3 |
| getCodes | 4 |
| getDimensions | 5 |
| getDSDIdentifier | 5 |
| getFlows | 6 |
| getProviders | 7 |

| | |
|----------------------------------|----|
| getSDMX | 7 |
| getTimeSeries | 8 |
| getTimeSeriesRevisions | 9 |
| getTimeSeriesTable | 10 |
| sdmxdf | 10 |
| sdmxHelp | 11 |

| | |
|--------------|-----------|
| Index | 13 |
|--------------|-----------|

| | |
|----------------|--|
| RJSDMX-package | <i>Gets timeseries from SDMX data Provider</i> |
|----------------|--|

Description

This package provides functions to extract timeseries data and structural metadata from an SDMX Provider (e.g. ECB, OECD, EUROSTAT) via SDMX Web Service

Details

Package: RJSDMX
Type: Package

The SDMX Connectors framework (of which RJSDMX is part) aims to offer data users the means for efficiently interacting with SDMX Web Service providers from within the most popular statistical tools. The source code of the SDMX Connectors project can be found at:

<https://github.com/amattioc/SDMX>

Information about the R Connector can be found in the dedicated wiki page:

<https://github.com/amattioc/SDMX/wiki/RJSDMX:-Connector-for-R>

In particular, all information related to configuration (network, tracing, security) can be found at:

<https://github.com/amattioc/SDMX/wiki/Configuration>

Author(s)

Attilio Mattiocco, Diana Nicoletti, Bank of Italy, IT Support for the Economic Research <attilio.mattiocco@bancaditalia.it>
<diana.nicoletti@bancaditalia.it>

See Also

getProviders, getTimeSeries, sdmxHelp

Examples

```
## Not run:
my_ts = getTimeSeries('ECB', 'EXR.M.USD.EUR.SP00.A')

## End(Not run)
```

| | |
|------------------|-------------------------------|
| addLocalProvider | <i>add new local provider</i> |
|------------------|-------------------------------|

Description

Configure a new local data provider (only SDMX 2.1 files are supported).

Usage

```
addLocalProvider(name, directory, description = "")
```

Arguments

| | |
|-------------|--|
| name | the name of the provider |
| directory | the directory where the files are stored |
| description | a brief text description of the provider |

Details

```
addLocalProvider(name, directory, description)
```

Examples

```
## Not run:  
addProvider('pname', 'pdir', 'my provider')  
  
## End(Not run)
```

| | |
|-------------|-------------------------|
| addProvider | <i>add new provider</i> |
|-------------|-------------------------|

Description

Configure a new data provider (only SDMX 2.1 REST providers are supported). This function can be used to configure a new (SDMX 2.1 compliant, REST based) data provider.

Usage

```
addProvider(name, endpoint, needsCredentials = FALSE, needsURLEncoding = FALSE,  
            supportsCompression = TRUE, description = "")
```

Arguments

| | |
|---------------------|--|
| name | the name of the provider |
| endpoint | the URL where the provider resides |
| needsCredentials | set this to TRUE if the user needs to authenticate to query the provider |
| needsURLEncoding | set this to TRUE if the provider does not handle character '+' in URLs |
| supportsCompression | set this to TRUE if the provider is able to handle compression |
| description | a brief text description of the provider |

Examples

```
## Not run:
addProvider('test', 'http://sdw-wsrest.ecb.europa.eu/service', FALSE)
getProviders()

## End(Not run)
```

| | |
|----------|-----------------------------------|
| getCodes | <i>get dsd codes for dataflow</i> |
|----------|-----------------------------------|

Description

Extract the codes of a dimension. This function is used to retrieve the list of codes available for the input dimension and flow.

Usage

```
getCodes(provider, flow, dimension)
```

Arguments

| | |
|-----------|---------------------------------|
| flow | the identifier of the dataflow |
| dimension | the identifier of the dimension |
| provider | the name of the provider |

Details

```
getCodes(provider, dataflow, dimension)
```

Examples

```
## Not run:
codes=getCodes('ECB', 'EXR', 'FREQ')

## End(Not run)
```

| | |
|---------------|--|
| getDimensions | <i>get dsd dimensions for dataflow</i> |
|---------------|--|

Description

Extract the dimensions of a DataFlow. This function is used to retrieve the list of dimensions of the input dataflow

Usage

```
getDimensions(provider, dataflow)
```

Arguments

| | |
|----------|--------------------------------|
| dataflow | the identifier of the dataflow |
| provider | the name of the provider |

Details

```
getDimensions(provider, dataflow)
```

Examples

```
## Not run:  
dims = getDimensions('ECB','EXR')  
  
## End(Not run)
```

| | |
|------------------|--|
| getDSDIdentifier | <i>get DSD Identifier for dataflow</i> |
|------------------|--|

Description

Extract the dsd identifier of a DataFlow. This function is used to retrieve the name of the keyfamily of the input dataflow.

Usage

```
getDSDIdentifier(provider, dataflow)
```

Arguments

| | |
|----------|--------------------------------|
| provider | the name of the provider |
| dataflow | the identifier of the dataflow |

Details

```
getDSDIdentifier(provider, dataflow)
```

Examples

```
## Not run:  
id = getDSDIdentifier('ECB', 'EXR')  
  
## End(Not run)
```

| | |
|----------|-------------------------------|
| getFlows | <i>get provider flow list</i> |
|----------|-------------------------------|

Description

Extract the list of DataFlows of a provider. This function is used to query the list of dataflows of the provider. A matching pattern can be provided, if needed.

Usage

```
getFlows(provider, pattern = "")
```

Arguments

| | |
|----------|--|
| pattern | the pattern to match against the dataflow id or description. If a pattern is not provided, all dataflows are returned. |
| provider | the name of the provider |

Details

```
getFlows(provider, pattern)
```

Author(s)

Attilio Mattiocco <Attilio.Mattiocco@bancaditalia.it>, Diana Nicoletti

Examples

```
## Not run:  
## get all flows from ECB  
flows = getFlows('ECB')  
## get all flows that contain the 'EXR'  
flows = getFlows('ECB', '*EXR*')  
  
## End(Not run)
```

| | |
|--------------|--------------------------------|
| getProviders | <i>get available providers</i> |
|--------------|--------------------------------|

Description

Extract the list of available Data Providers. This function is used to query the list of data providers.

Usage

```
getProviders()
```

Details

```
getProviders()
```

Examples

```
## Not run:  
getProviders()  
  
## End(Not run)
```

| | |
|---------|-----------------|
| getSDMX | <i>get data</i> |
|---------|-----------------|

Description

Extract a list of time series. This function is exactly the same as `getTimeSeries`.

Usage

```
getSDMX(provider, id, start = "", end = "")
```

Arguments

| | |
|----------|-------------------------------|
| id | identifier of the time series |
| provider | the name of the provider |
| end | the end time - optional |
| start | the start time - optional |

Details

```
getSDMX(provider, dataflow, start, end)
```

Examples

```
## Not run:
## get single time series: EXR.A.USD.EUR.SP00.A (or: EXR/A+M.USD.EUR.SP00.A)
my_ts=getSDMX('ECB','EXR.A.USD.EUR.SP00.A')
## get monthly and annual frequency: 'EXR.A|M.USD.EUR.SP00.A' (or: EXR/A+M.USD.EUR.SP00.A)
my_ts=getSDMX('ECB','EXR.A|M.USD.EUR.SP00.A')
## get all available frequencies: 'EXR.*.USD.EUR.SP00.A' (or: EXR/.USD.EUR.SP00.A)
my_ts=getSDMX('ECB','EXR.*.USD.EUR.SP00.A')

## End(Not run)
```

| | |
|---------------|------------------------|
| getTimeSeries | <i>get time series</i> |
|---------------|------------------------|

Description

Extract a list of time series. This function is used to extract a list of time series identified by the parameters provided in input. `getTimeSeries(provider, dataflow, start, end)`

Usage

```
getTimeSeries(provider, id, start = "", end = "")
```

Arguments

| | |
|-----------------------|-------------------------------|
| <code>id</code> | identifier of the time series |
| <code>provider</code> | the name of the provider |
| <code>end</code> | the end time - optional |
| <code>start</code> | the start time - optional |

Examples

```
## Not run:
## get single time series: EXR.A.USD.EUR.SP00.A (or: EXR/A+M.USD.EUR.SP00.A)
my_ts=getTimeSeries('ECB','EXR.A.USD.EUR.SP00.A')
## get monthly and annual frequency: 'EXR.A|M.USD.EUR.SP00.A' (or: EXR/A+M.USD.EUR.SP00.A)
my_ts=getTimeSeries('ECB','EXR.A|M.USD.EUR.SP00.A')
## get all available frequencies: 'EXR.*.USD.EUR.SP00.A' (or: EXR/.USD.EUR.SP00.A)
my_ts=getTimeSeries('ECB','EXR.*.USD.EUR.SP00.A')

## End(Not run)
```

getTimeSeriesRevisions
get data revisions

Description

Extract a list of time series starting from a specific update time and with history of revisions. This function works as **getTimeSeries** and **getSDMX** but the query can be narrowed to getting only observations that were updated after a specific point in time, and eventually it returns the revision history of the matching time series. This means that the result list can contain multiple instances of the same time series, each with the specific action and validity attributes.

Usage

```
getTimeSeriesRevisions(provider, id, start = "", end = "",  
  updatedAfter = "", includeHistory = TRUE)
```

Arguments

| | |
|----------------|---|
| id | identifier of the time series |
| provider | the name of the provider |
| end | the end time - optional |
| start | the start time - optional |
| updatedAfter | the updatedAfter time - optional. It has to be in the form: 'YYYY-MM-DD' |
| includeHistory | boolean parameter - optional. If TRUE the full list of revisions will be returned |

Details

```
getTimeSeriesRevisions(provider, id, start, end, updatedAfter, includeHistory)
```

Examples

```
## Not run:  
# get single time series with history:  
my_ts=getTimeSeriesRevisions('ECB', 'EXR.A.USD.EUR.SP00.A', includeHistory=TRUE)  
  
# get single time series (only observations updated after january 1st 2015):  
my_ts=getTimeSeriesRevisions('ECB', 'EXR.A.USD.EUR.SP00.A',  
  updatedAfter='2015', includeHistory=FALSE)  
  
# get single time series (full revision history starting from january 1st 2015):  
my_ts=getTimeSeriesRevisions('ECB', 'EXR.A.USD.EUR.SP00.A',  
  updatedAfter='2015', includeHistory=TRUE)  
  
## End(Not run)
```

getTimeSeriesTable *get time series and return a data.frame*

Description

Extract a list of time series identified by the parameters provided in input, and return a data.frame as result. getTimeSeriesTable(provider, dataflow, start, end)

Usage

```
getTimeSeriesTable(provider, id, start = "", end = "")
```

Arguments

| | |
|----------|-------------------------------|
| id | identifier of the time series |
| provider | the name of the provider |
| end | the end time - optional |
| start | the start time - optional |

Examples

```
## Not run:
# get single time series: EXR.A.USD.EUR.SP00.A (alternatively: EXR/A+M.USD.EUR.SP00.A)
my_df=getTimeSeriesTable('ECB', 'EXR.A.USD.EUR.SP00.A')

# get monthly and annual frequency: 'EXR.A|M.USD.EUR.SP00.A'
# (alternatively: EXR/A+M.USD.EUR.SP00.A)
my_df=getTimeSeriesTable('ECB', 'EXR.A|M.USD.EUR.SP00.A')

# get all available frequencies: 'EXR.*.USD.EUR.SP00.A'
# (alternatively: EXR/.USD.EUR.SP00.A)
my_df=getTimeSeriesTable('ECB', 'EXR.*.USD.EUR.SP00.A')

## End(Not run)
```

sdmxdf *convert time series to data.frame*

Description

This function is used to transform the output of the getSDMX (or getTimeseries) functions from a list of time series to a data.frame. The metadata can be requested by explicitly passing the appropriate parameters.

Usage

```
sdxdf(tslst, meta = FALSE, id = TRUE)
```

Arguments

| | |
|---------------------|--|
| <code>tslist</code> | the list of time series to be converted |
| <code>meta</code> | set this to TRUE if you want metadata to be included (default: FALSE, as this may increase the size of the result quite a bit) |
| <code>id</code> | set this to FALSE if you do not want the time series id to be included (default: TRUE) |

Details

```
sdxdf()
```

Examples

```
## Not run:  
a=getSDMX('ECB', 'EXR.A|Q|M|D.USD.EUR.SP00.A')  
ddf = sdxdf(a)  
ddf = sdxdf(a, meta=TRUE)  
  
## End(Not run)
```

sdxHelp

open helper

Description

Open a helper graphical application. This function opens a small sdx metadata browser that can be helpful when building queries.

Usage

```
sdxHelp(internalJVM = T)
```

Arguments

| | |
|--------------------------|--|
| <code>internalJVM</code> | TRUE (default) if the GUI has to live in the R JVM. Set this to FALSE in MAC, to avoid issue #41 |
|--------------------------|--|

Details

```
sdxHelp()
```

Examples

```
## Not run:  
#opens the helper in the R JVM  
sdmxHelp()  
#opens the helper in an external JVM  
sdmxHelp(FALSE)  
  
## End(Not run)
```

Index

- * **package**
 - RJSDMX-package, [2](#)
- * **rJava**
 - getFlows, [6](#)

- addLocalProvider, [3](#)
- addProvider, [3](#)

- getCodes, [4](#)
- getDimensions, [5](#)
- getDSDIdentifier, [5](#)
- getFlows, [6](#)
- getProviders, [7](#)
- getSDMX, [7](#)
- getTimeSeries, [8](#)
- getTimeSeriesRevisions, [9](#)
- getTimeSeriesTable, [10](#)

- RJSDMX (RJSDMX-package), [2](#)
- RJSDMX-package, [2](#)

- sdmxdf, [10](#)
- sdmxHelp, [11](#)