Package ‘TSsdmx’

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Title 'TSdbi' Extension to Connect with 'SDMX'
Description Methods to retrieve data in the Statistical Data and Metadata Exchange ('SDMX') format from several database. (For example, 'EuroStat', the European Central Bank, the Organisation for Economic Co-operation and Development, the 'Unesco' Institute for Statistics, and the International Labor Organization.) This is a wrapper for package 'RJSDMX'. Comprehensive examples of all the 'TS*' packages is provided in the vignette Guide.pdf with the 'TSdata' package.

Depends R (>= 2.8.0), TSdbi (>= 2015.1-1)
Imports methods, DBI (>= 0.3.1), tframe, tframePlus, RJSDMX(>= 1.3), rJava

Suggests tfplot

BuildVignettes true
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hasData 

Functions to Check a Returned Time Series Data Object

Description

Check a time series (matrix) for returned data and metadata.

Usage

hasData(x, quiet=FALSE)  
hasDataCount(x)  
hasDataNames(x)  
hasDataDescriptions(x)

Arguments

x  A time series (matrix) as returned by TSget using an sdmx connection.  
quiet  Suppress warnings and just return the logical result.

Details

These functions check data returned from SDMX databases such as Eurostat to verify if data and metadata has been returned by a query specification. This is a useful check because wildcard specifications may often result in no data being returned.

hasData returns a logical vector, one element for each series in x, indication TRUE if there is numeric data in that series or FALSE if all the data in the series is NA or NaN. If quiet=FALSE (the default) then a warning is issued for each series that has completely missing data.

hasDataCount prints a count of the number of series with actual data, and returns the number (invisibly).

hasDataNames returns the names of series with actual data.

hasDataDescriptions returns the descriptions of series with actual data.

Value

Depends.

See Also

TSget
### Examples

```r
# Not run:
require("TSsdmx")
eurostat <- TSconnect("sdmx", dbname="EUROSTAT")

# 28 series, 23 with data
z <- TSget("ei_nama_q.Q.MIO-EUR.NSA.CP.*.IT", eurostat)

sum(hasData(z, quiet=TRUE))
hasDataCount(z)
hasDataNames(z)
hasDataDescriptions(z)

# End(Not run)
```

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**TSsdmxMethods**

*Methods to wrap sdmx for TSdbi Generics*

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**Description**

Get a time series (matrix) using SDMX, for example, from the OECD database.

**Usage**

```r
sdmx(...)  
  # S4 method for signature 'sdmxConnection,missing'
TSconnect(
  q, dbname, user="", password="", host="", ...)
  # S4 method for signature 'character,TSsdmxConnection'
TSget(
  serIDs, con, TSrepresentation = options()$TSrepresentation, 
  tf = NULL, start = tfstart(tf), end = tfend(tf), names=serIDs, 
  quiet = TRUE, ...)
  # S4 method for signature 'character,TSsdmxConnection'
TSdates(
  serIDs, con, vintage=NULL, panel=NULL, ...)
  # S4 method for signature 'character,TSsdmxConnection'
TSdescription(x, con, ...)
  # S4 method for signature 'character,TSsdmxConnection'
TSdoc(x, con, ...)
  # S4 method for signature 'character,TSsdmxConnection'
TSlabel(x, con, ...)
  # S4 method for signature 'character,TSsdmxConnection'
TSsource(x, con, ...)
```
Arguments

- **q**: A character string indicating the query interface to use, or a database connection object.
- **dbname**: The name of the database to which the connection should be established, omitted if `q` is a database connection object.
- **con**: a database connection object.
- **serIDs**: identifiers for series on the database.
- **vintage**: character string indicating vintage of the series on the database (not supported by this database).
- **panel**: character string indicating panel of the series on the database (not supported by this database).
- **x**: time series data (TSput), or identifiers for series on the database (TSdoc and TSdescription).
- **names**: optional character vector to use for series names in the R object. See details.
- **tf**: time frame for trimming data, passed to tfwindow.
- **start**: time frame for trimming data, passed to tfwindow.
- **end**: time frame for trimming data, passed to tfwindow.
- **tsrepresentation**: time representation for returned series. (See `tSget` in package `TSdbi`.)
- **quiet**: logical to suppress progress report.
- **user**: (unused) a character string indicating a user id.
- **password**: (unused) a character string indicating a password.
- **host**: (unused) a character string indicating a host computer.
- **...**: Arguments passed to other methods or to sdmxCall.

Details

These functions interface to the SDMX databases such as the OECD web portal. `TSget` is a wrapper to `RJSDMX::getSDMX` to provide an interface that is consistent with `TSdbi`. The `TSdbi` function argument `serIDs` is passed as the series to return, and `dbname` indicates the data provider (e.g. "OECD"). The SDMX query syntax allows for the possibility of indicating several series by using `,`, `|` and `*` characters. For example, `'G20_PRICES.CAN+MEX.CPALTT01.IXOB.M'` would indicate Canada and Mexico, while `'G20_PRICES.*.CPALTT01.IXOB.M'` would indicate all countries. By default, `TSget` will use series names as returned by the SDMX call. The argument names can be used to replace names, but only in some situations. If `*` is used in `serIDs` then names will be ignored because the number and order of the returned series cannot be guaranteed. If `+` or `|` are used in more than one field then names will be ignored. If `+` or `|` are used in only one field then names will be applied, but this requires that `TSget` sort the series in the specified order since the SDMX call does not guarantee the return order. (This may change, an enhancement request has been made.) Thus, specifying `serIDs` as `'G20_PRICES.CAN+MEX.CPALTT01.IXOB.M'` or specifying it as `c('G20_PRICES.CAN.CPALTT01.IXOB.M', 'G20_PRICES.MEX.CPALTT01.IXOB.M')` should return the same result, but the mechanism is different. In the first case the `getSdmx` call returns both series and then the `TSget` sorts the result into the proper order to apply the names. In the second case the `TSget` code makes two separate calls to `getSdmx`. 
The treatment of start and end dates also differs in a subtle way depending on the specification. A character specification is assumed to be an SDMX specification, so start="1990-Q1" is passed unchanged as part of the getSdmx call whereas start=c(1990,1) cannot determine the frequency, so uses getSdmx to return the whole series, then truncates at the appropriate start date.

(See TSget in TSdbi for more details on TSget.)

TSsdmx does not support writing data to the source.

The class TSSdmxConnection extends class DBIConnection in the DBI package.

See the vignette in TSdata for additional examples.

When the TSsdmx method TSconnect is first used the underlying code reads a configuration file that sets, among other things, the amount of printout done during retrieval. The default is useful for debugging but will be more than typically expected in an R session. A system wide default location for this file can be set. A user’s default will be found in the users home directory (~/.SdmxClient in Linux). More details on this file can be found at https://github.com/amattioc/SDMX/wiki/Configuration. R users will probably want to specify SDMX_level = OFF and java.util.logging.ConsoleHandler.level = OFF to suppress most printed output. Otherwise, R programs that use try() will not suppress printed error messages as they should. With the levels set OFF, the error and warning messages are still returned to the R to deal with as appropriate.

Value
Depends.

See Also
getSDMX, TSdates, TSget, tfwindow.

Examples

```r
require("TSSdmx")
require("tfplot")
## Not run:
oecd <- TSconnect("sdmx", dbname="OECO")
x <- TSget('G20_PRICES.CAN.CPALLT01.IXOB.M', oecd)
tfplot(x)
## End(Not run)
```

### verifyQuery

#### Check Query Against a Provider

**Description**

Check validity of fields of a query against a provider.

**Usage**

```r
verifyQuery(provider, Q, verbose = TRUE)
```
Arguments

provider  Character string indicating a provider.
Q          Character string indicating fields of a query.
verbose   Logical indicating if problems should be printed out. If FALSE only return the logical result.

Details

This function checks fields of the query Q against those expected by the provider indicated by provider. If all fields check ok then TRUE is returned, otherwise the result is FALSE. If verbose is TRUE then the first error found will be printed.

Note that, even though the query is valid, the provider may not have data for the specified combination of fields, in which case a data request will not return data.

As of February 2015, the WB provider is not responding to queries in the same way as it indicates they should be, so this utility is not very useful with this provider. That is, even if the declared structure is FREQ.SERIES.REF_AREA, you have to build the WB query as REF_AREA.SERIES.

Value

TRUE/FALSE returned invisibly

See Also

getProviders, getFlows, getDimensions, getCodes

Examples

```r
## Not run:
print(verifyQuery('IMFx', 'PGI.CA.*.*.*')) # returns FALSE
print(verifyQuery('IMF', 'PGI.CA.*.*.*', verbose = FALSE)) # returns TRUE
print(verifyQuery('IMF', 'PGI.CAN.*.*.*')) # returns FALSE

# print(verifyQuery('NBB', 'HICP.000000.*.*'))
# print(verifyQuery('NBB', 'HICP.000000.BE.M'))

## End(Not run)
```
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