

Package ‘GetITRData’

February 28, 2018

Title Reading Financial Reports from Bovespa's ITR System

Version 0.7

Date 2017-10-21

Description Reads quarterly and annual financial reports including assets, liabilities, income and cash flow statements from Bovespa's ITR (informacoes trimestrais) system <http://www.bmfbovespa.com.br/en_us/products/listed-equities-and-derivatives/equities/listed-companies.htm>.

The ITR/DFP system is a web based interface for all financial reports of companies traded at Bovespa. The package is especially designed for large scale data importation, keeping a tabular (long) structure for easier processing.

Depends R (>= 3.3.0)

Imports stringr,XML,dplyr, readr, reshape2, tibble, xlsx, stats, curl

License GPL-2

BugReports <https://github.com/msperlin/GetITRData/issues>

URL <https://github.com/msperlin/GetITRData/>

LazyData true

RoxygenNote 6.0.1

Suggests knitr, rmarkdown, testthat, ggplot2

VignetteBuilder knitr

NeedsCompilation no

Author Marcelo Perlin [aut, cre]

Maintainer Marcelo Perlin <marceloperlin@gmail.com>

Repository CRAN

Date/Publication 2018-02-28 13:48:18 UTC

R topics documented:

<code>gitrd.convert.to.wide</code>	2
<code>gitrd.export.ITR.data</code>	3

gitrd.fix.dataframes	3
gitrd.get.bovespa.data	4
gitrd.get.inflation.data	5
gitrd.get.info.companies	6
gitrd.GetITRData	6
gitrd.read.fre.zip.file	8
gitrd.read.fwf.file	8
gitrd.read.zip.file	9
gitrd.read.zip.file.type.1	10
gitrd.read.zip.file.type.2	10
gitrd.read.zip.file.type.fre	11
gitrd.search.company	12

Index	13
--------------	-----------

gitrd.convert.to.wide *Converts a dataframe from gitr_GetITRData to the wide format*

Description

Converts a dataframe from gitr_GetITRData to the wide format

Usage

```
gitrd.convert.to.wide(data.in, data.in.cols = "original")
```

Arguments

data.in Data frame with financial information
data.in.cols Which data to go in rows values ('original' or 'inflation adjusted')

Value

A dataframe in the wide format

Examples

```
# get example data from RData file
my.f <- system.file('extdata/ExampleReport_Petrobras.RData', package = 'GetITRData')
load(my.f)

df.assets <- df.reports$fr.assets[[1]]
df.assets.wide <- gitrd.convert.to.wide(df.assets)
```

gitrd.export.ITR.data *Export tibble to an excel file*

Description

Export tibble to an excel file

Usage

```
gitrd.export.ITR.data(data.in, base.file.name = paste0("GetITRData_Export_",  
  Sys.Date()), type.export = "xlsx", format.data = "wide")
```

Arguments

data.in	Tibble with financial information (output of gitrd.GetITRData)
base.file.name	The basename of excel file (don't include extension)
type.export	The extension of the desired format (only 'xlsx' implemented so far)
format.data	The format of output. 'wide' (default) for a wide table and 'long' for a long table

Value

nothing

Examples

```
# get example data from RData file  
my.f <- system.file('extdata/ExampleReport_Petrobras.RData', package = 'GetITRData')  
load(my.f)  
  
## Not run: # dontrun: keep cran check time short  
gitrd.export.ITR.data(df.reports, base.file.name = 'MyExcelFile', format.data = 'wide')  
  
## End(Not run)
```

gitrd.fix.dataframes *Fix dataframe for version issues and inflation measures (internal)*

Description

Fix dataframe for version issues and inflation measures (internal)

Usage

```
gitrd.fix.dataframes(df.in, inflation.index, df.inflation, max.levels = 3)
```

Arguments

df.in	A dataframe with financial statements
inflation.index	Sets the inflation index to use for finding inflation adjusted values of all reports. Possible values: 'dollar' (default) or 'IPCA', the brazilian main inflation index. When using 'IPCA', the base date is set as the last date found in itr/dfp dataset.
df.inflation	Dataframe with inflation data
max.levels	Sets the maximum number of levels of accounting items in financial reports

Value

The fixed data.frame

Examples

```
#'
# get example data from RData file
my.f <- system.file('extdata/ExampleReport_Petrobras.RData', package = 'GetITRData')
load(my.f)

df.assets <- df.reports$fr.assets[[1]]

df.assets.fixed <- gitrd.fix.dataframes(df.assets,
                                       inflation.index = 'none',
                                       df.inflation = data.frame())
```

```
gitrd.get.bovespa.data
```

Reads information for a company from B3 site

Description

Given a CVM code, this function scrapes information from the company page.

Usage

```
gitrd.get.bovespa.data(my.id)
```

Arguments

my.id	A CVM id
-------	----------

Value

A list with several dataframes

Examples

```
## Not run: # keep cran check fast
l.info.PETR <- gitrd.get.dovespa.data(my.id = 9512)
str(l.info.PETR)

## End(Not run)
```

`gitrd.get.inflation.data`

Downloads and read inflation data from github

Description

Inflation data is available at git repo 'msperlin/GetITRData_auxiliary'

Usage

```
gitrd.get.inflation.data(inflation.index)
```

Arguments

`inflation.index`

Sets the inflation index to use for finding inflation adjusted values of all reports.
Possible values: 'dollar' (default) or 'IPCA', the brazilian main inflation index.
When using 'IPCA', the base date is set as the last date found in itr/dfp dataset.

Value

A dataframe with inflation data

Examples

```
## Not run: # keep cran check fast
df.inflation <- gitrd.get.inflation.data('IPCA')
str(df.inflation)

## End(Not run)
```

```
gitrd.get.info.companies
```

Reads up to date information about Bovespa companies from a github file

Description

A csv file with information about available companies and time periods is downloaded from github and read. This file is updated periodically and manually by the author. When run for the first time in a R session, a .RDATA file containing the output of the function is saved in tempdir() for caching.

Usage

```
gitrd.get.info.companies(type.data = "companies_files")
```

Arguments

`type.data` A string that sets the type of information to be returned ('companies' or 'companies_files'). If 'companies', it will return a dataframe with several information about companies, but without download links.

Value

A dataframe with several information about Bovespa companies

Examples

```
## Not run: # keep cran check fast
df.info <- gitrd.get.info.companies()
str(df.info)

## End(Not run)
```

```
gitrd.GetITRData
```

Downloads and reads financial reports from Bovespa

Description

Quarterly and annual financial reports are downloaded from B3 for a combination of companies and time period. The easiest way to get started with gitrd.GetITRData is looking for the official name of traded companies using function gitrd.search.company('nametolookfor'). Alternatively, you can use function gitrd.get.info.companies('companies') to import a dataframe with information for all available companies and time periods.

Usage

```
gitrd.GetITRData(name.companies, first.date = Sys.Date() - 12 * 30,
  last.date = Sys.Date(), type.info = "individual",
  periodicity.fin.report = "annual", inflation.index = "dollar",
  max.levels = 3, folder.out = tempdir(), be.quiet = FALSE)
```

Arguments

name.companies	Official names of companies to get financial reports (e.g. 'ELETROPAULO METROPOLITANA EL.S.PAULO S.A'). Names of companies can be found using function <code>gitrd.search.company('nametolookfor')</code> or <code>gitrd.get.info.companies('companies')</code>
first.date	First date (YYYY-MM-DD) to get data. Character or Date. E.g. <code>first.date = '2010-01-01'</code> .
last.date	Last date (YYYY-MM-DD) to get data. Character or Date. E.g. <code>last.date = '2017-01-01'</code> .
type.info	Type of financial statements, 'individual' (default) or 'consolidated'. Argument can be a single value or a vector with the same length as <code>name.companies</code> . The individual type only includes financial statements from the company itself, while consolidated statements adds information about controlled companies
periodicity.fin.report	The frequency of financial reports: 'annual' (default) or 'quarterly'
inflation.index	Sets the inflation index to use for finding inflation adjusted values of all reports. Possible values: 'dollar' (default) or 'IPCA', the brazilian main inflation index. When using 'IPCA', the base date is set as the last date found in <code>itr/dfp</code> dataset.
max.levels	Sets the maximum number of levels of accounting items in financial reports
folder.out	Folder where to download and manipulate the zip files. Default = <code>tempdir()</code>
be.quiet	Should the function output information about progress? TRUE (default) or FALSE

Value

A tibble (dataframe with lists) object with all gathered financial statements, with each company as a row in the tibble.

Examples

```
## Not run: #dontrun: keep cran check time short
name.companies <- 'ELETROPAULO METROPOLITANA EL.S.PAULO S.A'
first.date <- '2005-01-01'
last.date <- '2006-01-01'

df.statements <- gitrd.GetITRData(name.companies = name.companies,
  first.date = first.date,
  last.date = last.date)

## End(Not run)
```

`gitrd.read.fre.zip.file`*Reads a single zip file downloaded from Bovespa*

Description

Reads a single zip file downloaded from Bovespa

Usage

```
gitrd.read.fre.zip.file(my.zip.file, folder.to.unzip = tempdir(),  
  l.other.info)
```

Arguments

`my.zip.file` Full path to zip file
`folder.to.unzip` Folder to unzip files (default = `tempdir()`)
`l.other.info` Other information as a list

Value

A list with several dataframes containing financial statements

Examples

```
my.f <- system.file('extdata/434_ARAC_2008-09-30.zip', package = 'GetITRData')  
  
my.l <- gitrd.read.zip.file(my.f, id.type = 'before 2011', type.fin.report = 'itr')  
print(my.l)
```

`gitrd.read.fwf.file` *Reads FWF file from bovespa (internal)*

Description

Reads FWF file from bovespa (internal)

Usage

```
gitrd.read.fwf.file(my.f, type.fin.report)
```


Arguments

my.f File to be read
type.fin.report Periododicy of fin data ('itr' - quarterly or 'dfp' - annual)

Value

A dataframe with data

Examples

```
my.f <- system.file('extdata/ITRBP AE.001', package = 'GetITRData')  
df.assets <- gitrd.read.fwf.file(my.f, type.fin.report = 'itr')
```

gitrd.read.zip.file *Reads a single zip file downloaded from Bovespa*

Description

Reads a single zip file downloaded from Bovespa

Usage

```
gitrd.read.zip.file(my.zip.file, folder.to.unzip = tempdir(), id.type,  
                  type.fin.report)
```

Arguments

my.zip.file Full path to zip file
folder.to.unzip Folder to unzip files (default = tempdir())
id.type The type of file structure ('after 2011' or 'before 2011')
type.fin.report Periododicy of fin data ('itr' - quarterly or 'dfp' - annual)

Value

A list with several dataframes containing financial statements

Examples

```
my.f <- system.file('extdata/434_ARAC_2008-09-30.zip', package = 'GetITRData')  
my.l <- gitrd.read.zip.file(my.f, id.type = 'before 2011', type.fin.report = 'itr')  
print(my.l)
```

`gitrd.read.zip.file.type.1`*Reads folder for zip file post 2011 (internal)*

Description

Reads folder for zip file post 2011 (internal)

Usage

```
gitrd.read.zip.file.type.1(rnd.folder.name, folder.to.unzip = tempdir(),
  type.fin.report)
```

Arguments

```
rnd.folder.name      Folder where unzipped files are available
folder.to.unzip      Folder to unzip files (default = tempdir())
type.fin.report      Periodicity of fin data ('itr' - quarterly or 'dfp' - annual)
```

Value

A list with financial statements

Examples

```
# no example (this functions not used directly)
```

`gitrd.read.zip.file.type.2`*Reads folder for zip file pre 2011 (internal)*

Description

Reads folder for zip file pre 2011 (internal)

Usage

```
gitrd.read.zip.file.type.2(rnd.folder.name, folder.to.unzip = tempdir(),
  type.fin.report)
```

Arguments

`rnd.folder.name`
Folder where unzipped files are available
`folder.to.unzip`
Folder to unzip files (default = `tempdir()`)
`type.fin.report`
Periodicity of fin data ('itr' - quarterly or 'dfp' - annual)

Value

A list with financial statements

Examples

```
# no example (this functions not used directly)
```

`gitrd.read.zip.file.type.fre`
Reads folder for zip file post 2011 (internal)

Description

Reads folder for zip file post 2011 (internal)

Usage

```
gitrd.read.zip.file.type.fre(rnd.folder.name, folder.to.unzip = tempdir())
```

Arguments

`rnd.folder.name`
Folder where unzipped files are available
`folder.to.unzip`
Folder to unzip files (default = `tempdir()`)

Value

A list with financial statements

Examples

```
# no example (this functions not used directly)
```

gitrd.search.company *Helps users search for a company name*

Description

Helps users search for a company name

Usage

```
gitrd.search.company(char.to.search)
```

Arguments

char.to.search Character for partial matching

Value

Names of found companies

Examples

```
## Not run: # dontrun: keep cran check fast  
gitrd.search.company('GERDAU')
```

```
## End(Not run)
```

Index

[gitrd.convert.to.wide](#), [2](#)
[gitrd.export.ITR.data](#), [3](#)
[gitrd.fix.dataframes](#), [3](#)
[gitrd.get.bovespa.data](#), [4](#)
[gitrd.get.inflation.data](#), [5](#)
[gitrd.get.info.companies](#), [6](#)
[gitrd.GetITRData](#), [6](#)
[gitrd.read.fre.zip.file](#), [8](#)
[gitrd.read.fwf.file](#), [8](#)
[gitrd.read.zip.file](#), [9](#)
[gitrd.read.zip.file.type.1](#), [10](#)
[gitrd.read.zip.file.type.2](#), [10](#)
[gitrd.read.zip.file.type.fre](#), [11](#)
[gitrd.search.company](#), [12](#)