

Package ‘TAQMNGR’

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Title Manage Tick-by-Tick Transaction Data

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Depends R (>= 3.0-2)

LinkingTo Rcpp (>= 0.11.0)

SystemRequirements zlib headers and library

Description Manager of tick-by-tick transaction data that performs 'cleaning', 'aggregation' and 'import' in an efficient and fast way. The package engine, written in C++, exploits the 'zlib' and 'gzstream' libraries to handle gzipped data without need to uncompress them. 'Cleaning' and 'aggregation' are performed according to Brownlees and Gallo (2006) <DOI:10.1016/j.csda.2006.09.030>. Currently, TAQMNGR processes raw data from WRDS (Wharton Research Data Service, <<https://wrds-web.wharton.upenn.edu/wrds/>>).

License GPL (>= 2)

URL <https://cran.r-project.org/package=TAQMNGR>

NeedsCompilation yes

Repository CRAN

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TAQ

*TAQ Manager***Description**

Manage tick-by-tick transaction data

Usage

```
TAQ.CleanTickByTick(dirInput, dirOutput,
    window = 80, deltaTrimmed = 0.10, granularity = 0.04, useCleaned = TRUE)

TAQ.Aggregate(dirInput, symbol, bin, useAggregated = TRUE)

TAQ.Report(dirInput, symbol)

TAQ.Read(dirInput, symbol, import = NULL, startDate, endDate, bin)
```

Arguments

dirInput	A <i>character</i> scalar: the input directory. For the function <code>CleanTickByTick()</code> , <code>dirInput</code> is the name of the folder containing the raw data files. In this case it is important that <code>dirInput</code> includes only <code>.gz</code> files to be cleaned. For the remaining functions, <code>dirInput</code> is the name of the folder including the previously cleaned/aggregated data (appearing as <code>dirOutput</code> in the function <code>CleanTickByTick()</code>).
dirOutput	A <i>character</i> scalar: the output directory. It must be different from <code>dirInput</code> .
window	A <i>numeric</i> integer scalar: the window size for the trimming procedure of data clean (see Details).
deltaTrimmed	A <i>numeric</i> scalar into $(0,1)$: the trimming proportion (see Details).
granularity	A <i>numeric</i> positive scalar: the granularity parameter (see Details).
useCleaned	A <i>logical</i> scalar: if <code>TRUE</code> , previously cleaned files (if any) are not cleaned again.
useAggregated	A <i>logical</i> scalar: if <code>TRUE</code> , previously aggregated data (if any) are not aggregated again.
symbol	A <i>character</i> (vector in <code>TAQ.Aggregate()</code> ; scalar in <code>TAQ.Report()</code> and <code>TAQ.Read()</code>): the ticker symbols of interest.
startDate	A <i>numeric</i> integer scalar: the start date in the <code>yyyymmdd</code> format.
endDate	A <i>numeric</i> integer scalar: the end date in the <code>yyyymmdd</code> format.
bin	A <i>numeric</i> integer scalar: the bin size (in seconds) for aggregating data.
import	A <i>character</i> : the list of fields to be imported. One or more among: "FIRST": First price in the bin. "MIN": Min price in the bin.

"MAX": Max price in the bin.
 "LAST": Last price in the bin.
 "SIZE": First price in the bin.
 "#TRADES": Number of trades in the bin.
 "VWAP": Volume Weighted Average Price in the bin.
 If NULL, all fields are imported.

Details

The meaning of the arguments `window`, `deltaTrimmed`, and `granularity` is detailed in the reference below.

References

Brownlees, C. T., and Gallo, G. M. (2006). Financial Econometric Analysis at Ultra-High Frequency: Data Handling Concerns, *Computational Statistics and Data Analysis* **51**, 2232–2245.

Examples

```
#### A fake dataset for running the example can be downloaded at
#### 'http://local.disia.unifi.it/cipollini/webpage-new/data/data_sample.txt.gz'
## Input
# dirInput <- "path of the input folder"
# dirOutput <- "path of the output folder" ## Must be different from 'dirInput'
## Clean
# TAQ.CleanTickByTick(dirInput = dirInput, dirOutput = dirInput)
## Make the report (1 at a time)
# TAQ.Report(dirInput = dirOutput, symbol = c("DOG")) ## A scalar symbol
# TAQ.Report(dirInput = dirOutput, symbol = c("GNU")) ## A scalar symbol
## Aggregate
# TAQ.Aggregate(dirInput = dirOutput, symbol = c("DOG", "GNU"), bin = 300,
#   useAggregated = TRUE)
## Import data
# dog <- TAQ.Read(dirInput = dirOutput, symbol = "DOG",
#   startDate = 00010101, endDate = 20141231, bin = 300)
```

TAQMNGR

TAQ Manager

Description

The package manages tick-by-tick transaction data, performing *cleaning*, *aggregation* and *import*.

Details

The package manages tick-by-tick transaction data, performing *cleaning*, *aggregation* and *import* in an efficient and fast way (the package engine is developed in C++).

Cleaning and Aggregation are performed according to Brownlees and Gallo (2006).

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Note

Currently, the package processes raw data from WRDS (Wharton Research Data Service). They have to satisfy the following requirements:

- all fields have to be included (select the 'Check All' button at the WRDS downloading page);
- select the fixed-width text and 'G zip' as output format and compression type, respectively, at the WRDS downloading page.

An example with fake raw data can be downloaded at http://local.disia.unifi.it/cipollini/webpage-new/data/data_sample.txt.gz.

The package uses the following libraries: 'Gzstream' (available at 'http://www.cs.unc.edu/Research/compgeom/gzstream/' under LGPL license), and 'zlib' (freely available at 'http://www.zlib.net/').

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References

Brownlees, C. T., and Gallo, G. M. (2006). Financial Econometric Analysis at Ultra-High Frequency: Data Handling Concerns, *Computational Statistics and Data Analysis* **51**, 2232–2245.

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