

Package ‘bea.R’

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Title Bureau of Economic Analysis API

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Depends R (>= 3.2.1), data.table

Imports httr, DT, shiny, jsonlite, googleVis, shinydashboard, ggplot2,
stringr, chron, gtable, scales, htmltools, httpuv, xtable,
stringi, magrittr, htmlwidgets, Rcpp, munsell, colorspace,
plyr, yaml

Description Provides an R interface for the Bureau of Economic Analysis (BEA) API (see <http://www.bea.gov/API/bea_web_service_api_user_guide.htm> for more information) that serves two core purposes -

1. To Extract/Transform/Load data [beaGet()] from the BEA API as R-friendly formats in the user's work space [transformation done by default in beaGet() can be modified using optional parameters; see, too, bea2List(), bea2Tab()].
2. To enable the search of descriptive meta data [beaSearch()].

Other features of the library exist mainly as intermediate methods or are in early stages of development.

Important Note - You must have an API key to use this library.

Register for a key at <<http://www.bea.gov/API/signup/index.cfm>>.

URL <https://github.com/us-bea/bea.R>

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LazyData no

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bea2List	<i>Convert BEA API httr response payload to list</i>
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Description

Convert BEA API httr response payload to list

Usage

```
bea2List(beaPayload, isMeta = FALSE)
```

Arguments

beaPayload	An object with httr class 'response' from call to BEA API
isMeta	Special parameter meant to interact with metadata functions (default: FALSE)

Value

An object of class 'list' of several dimensions. View list structure using 'str(yourList)'.

Examples

```
userSpecList <- list('UserID' = 'yourKey' ,
  'Method' = 'GetData',
  'datasetname' = 'NIPA',
  'Frequency' = 'A',
  'TableID' = '68',
  'Year' = 'X')
resp <- beaGet(userSpecList, asTable = FALSE)
BL <- bea2List(resp)
```

bea2Tab	<i>Convert BEA API httr response or list payload to data.table</i>
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Description

Convert BEA API httr response or list payload to data.table. Also, converts LONG data frame (default API format - see bea2List results) to WIDE data (with years as columns) by default

Usage

```
bea2Tab(beaPayload, asWide = TRUE, iTableStyle = TRUE)
```

Arguments

beaPayload	An object of class 'list' or httr 'response' returned from beaGet() call to BEA API
asWide	Return data.table in wide format (default: TRUE)
iTableStyle	If "asWide = TRUE", setting "iTableStyle = TRUE" will return data.table in same format as shown on BEA website, with dates and attributes as column headers and series as rows; otherwise, results have series codes as column headers (default: TRUE)

Value

An object of class 'data.table' containing data from beaGet(...) with custom attributes(BDT)\$params.

Examples

```
userSpecList <- list('UserID' = 'yourKey' ,
  'Method' = 'GetData',
  'datasetname' = 'NIPA',
  'Frequency' = 'A',
  'TableID' = '68',
  'Year' = 'X')
resp <- beaGet(userSpecList)
BDT <- bea2Tab(resp)
```

beaGet	<i>Pass list of user specifications (including API key) to return data from BEA API.</i>
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Description

Pass list of user specifications (including API key) to return data from BEA API.

Usage

```
beaGet(beaSpec, asString = FALSE, asList = FALSE, asTable = TRUE,
       asWide = TRUE, isMeta = FALSE, iTableStyle = TRUE)
```

Arguments

beaSpec	A list of user specifications (required). In this example, 'GetData' specifies that we want data values (rather than metadata), 'NIPA' specifies the dataset, 'A' specifies that we want annual data, 'TableID' = '68' gets a specific table, and 'X' gets all years. See BEA API documentation or use metadata methods for complete lists of parameters.
asString	Return result body as a string (default: FALSE)
asList	Return result body as a list (default: FALSE)
asTable	Return result body as a data.table (default: TRUE)
asWide	Return data.table in wide format (default: TRUE)
isMeta	Special parameter meant to interact with metadata functions (default: FALSE)
iTableStyle	If "asWide = TRUE", setting "iTableStyle = TRUE" will return data.table in same format as shown on BEA website, with dates and attributes as column headers and series as rows; otherwise, results have series codes as column headers (default: TRUE)

Value

By default, an object of class 'list' of several dimensions. View list structure using 'str(yourList)'.

Examples

```
userSpecList <- list('UserID' = 'yourAPIKey' ,
                    'Method' = 'GetData',
                    'datasetname' = 'NIPA',
                    'Frequency' = 'A',
                    'TableID' = '68',
                    'Year' = 'X')
BDT <- beaGet(userSpecList, asTable = TRUE)
```

beaParams

Gives list of parameters possible for a given dataset

Description

Gives list of parameters possible for a given dataset

Usage

```
beaParams(beaKey, setName)
```

Arguments

beaKey	Your API key
setName	Name of BEA dataset (e.g., 'NIPA')

Value

A metadata object of class 'list' of several dimensions. View list structure using 'str(yourList)'.

Examples

```
beaParams('yourAPIkey', 'RegionalData')
```

beaParamVals	<i>Gives list of values possible for a given dataset's parameters</i>
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Description

Gives list of values possible for a given dataset's parameters

Usage

```
beaParamVals(beaKey, setName, paramName)
```

Arguments

beaKey	Your API key
setName	Name of BEA dataset (e.g., NIPA)
paramName	Name of BEA dataset parameter (e.g., TableID)

Value

A metadata object of class 'list' of several dimensions. View list structure using 'str(yourList)'.

Examples

```
beaParamVals('yourAPIkey', 'RegionalData', 'keycode')
```

beaSearch	<i>Search a selection of indexed BEA data table names, series labels, and series codes.</i>
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Description

Searches indexed dataset table name, label, and series codes. CAUTION: Currently only works with NATIONAL datasets (NIPA, NIUnderlyingDetail, FixedAssets), temporarily excluding FixedAssets, and REGIONAL datasets (RegionalProduct, RegionalIncome)

Usage

```
beaSearch(searchTerm, beaKey = NULL, asHtml = FALSE)
```

Arguments

searchTerm	A word or phrase of class 'character' to be found in BEA datasets
beaKey	Character string representation of user API key. Necessary for first time use and updates; recommended for anything beyond one-off searches from the console.
asHtml	Option to return results as DT markup, viewable in browser. Allows search WITHIN YOUR ALREADY-FILTERED RESULTS ONLY . Requires package 'DT' to be installed.

Value

An object of class 'data.table' with information about all indexed sets in which the search term was found.

Examples

```
beaSearch('gross domestic product', asHtml = TRUE)
```

beaSets	<i>Returns a list of all datasets</i>
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Description

Returns a list of all datasets

Usage

```
beaSets(beaKey)
```

Arguments

beaKey	Your API key
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Value

A metadata object of class 'list' of several dimensions. View list structure using 'str(yourList)'.

Examples

```
beaSets('yourAPIkey')
```

beaUpdateMetadata	<i>Download BEA metadata into library/data folder if needed</i>
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Description

Download BEA metadata into library/data folder if needed

Usage

```
beaUpdateMetadata(datasetList, beaKey)
```

Arguments

datasetList	list of BEA datasets to update local metadata file for (e.g., list('NIPA', 'FixedAs-sets'))
beaKey	Your API key

Value

Nothing. This updates local .RData files to be used in beaSearch.

Examples

```
beaUpdateMetadata(list('RegionalData', 'NIPA'), beaKey = 'yourAPIkey')
```

beaViz	<i>Visualize BEA API response payload</i>
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Description

When entered into the R console, the function below starts an interactive dashboard. CAUTION: Currently only works with NATIONAL datasets (NIPA, NIUnderlyingDetail, FixedAs-sets). R Studio users must opt to "show in browser" for this method to be fully functional.

Usage

```
beaViz(beaPayload = NULL, beaKey = NULL)
```

Arguments

beaPayload An httr response from call to BEA API
beaKey Your 36-digit BEA API key

Examples

```
userSpecList <- list('UserID' = 'yourKey' ,  
  'Method' = 'GetData',  
  'datasetname' = 'NIPA',  
  'Frequency' = 'A',  
  'TableID' = '68',  
  'Year' = 'X')  
resp <- beaGet(userSpecList)  
BDF <- beaViz(resp)  
userSpecList <- list('UserID' = 'yourKey' ,  
  'Method' = 'GetData',  
  'datasetname' = 'NIPA',  
  'Frequency' = 'A',  
  'TableID' = '68',  
  'Year' = 'X')
```

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