Package 'tradestatistics'

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Type Package

Title Open Trade Statistics API Wrapper and Utility Program

Version 1.0

URL https://docs.ropensci.org/tradestatistics/

BugReports https://github.com/ropensci/tradestatistics/issues

Description Access 'Open Trade Statistics' API from R to download international trade data.

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LazyData TRUE

Imports crul, jsonlite, memoise, data.table, digest

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Suggests knitr, rmarkdown, DT, testthat (>= 2.1.0), vcr, covr

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R topics documented:

`ots_countries` *A table of official country names, ISO-3 codes and other metadata*

Description

Provides official codes taken from the United Nations official sources. This data is used by the functions provided within this package to validate user parameters and add both product and country text columns to the data, therefore reducing the number of API calls and the time to generate the requested data.

Usage

```
ots_countries
```

Format

A data frame with 249 observations on the following 6 variables.

`country_iso` ISO code of the country (e.g. "chl" means Chile)

`country_name_english` Country name (e.g. Germany)

`country_fullname_english` Country name with indications (e.g. Germany (former Federal Republic of Germany until 1990))

`continent_id` Numeric id of the continent where the country belongs to

`continent` Continent where the country belongs to

`eu28_member` Dummy variable such that 1 means "belongs to EU-28 group" and 0 otherwise \

Examples

```
ots_countries
```

---

ots_country_code *String matching of official country names and ISO-3 codes according to the United Nations nomenclature*

Description

Takes a text string and searches within the package data for a country code in the context of valid API country codes.

Usage

```
ots_country_code(countryname = NULL)
```

Arguments

`countryname`	A text string such as "Chile", "CHILE" or "CHL".

Value

A single character if there is a exact match (e.g. `ots_country_code("Chile")`) or a tibble in case of multiple matches (e.g. `ots_country_code("Germany")`)

Examples

```
ots_country_code("Chile ")
ots_country_code("america")
ots_country_code("UNITED  STATES")
ots_country_code(" united_")
```

`ots_create_tidy_data` *Downloads and processes the data from the API to return a human-readable tibble*

Description

Accesses `api.tradestatistics.io` and performs different API calls to transform and return tidy data.

Usage

```
ots_create_tidy_data(
  years = 2018,
  reporters = "usa",
  partners = "all",
  products = "all",
  sections = "all",
  groups = "all",
  table = "yr",
  max_attempts = 5,
  use_cache = FALSE,
  file = NULL,
  use_localhost = FALSE
)
```

Arguments

`years`	Year contained within the years specified in api.tradestatistics.io/year_range (e.g. `c(1980,1985)`, `c(1980:1981)` or `1980`). Default set to `1962`.
`reporters`	ISO code for reporter country (e.g. `"chl"`, `"Chile"` or `c("chl","Peru")`). Default set to `"all"`.
`partners`	ISO code for partner country (e.g. `"chl"`, `"Chile"` or `c("chl","Peru")`). Default set to `"all"`.
`products`	HS product codes (e.g. `"0101"`, `"01"` or search matches for `"apple"`) to filter products. Default set to `"all"`.
`sections`	unofficial product sections (e.g. `"01"` or search matches for `"animals"`) to filter sections Default set to `"all"`.
`groups`	HS product groups (e.g. `"01"` or search matches for `"animals"`) to filter groups. Default set to `"all"`.
`table`	Character string to select the table to obtain the data. Default set to `yr` (Year - Reporter). Run `ots_tables` in case of doubt.
`max_attempts`	How many times to try to download data in case the API or the internet connection fails when obtaining data. Default set to `5`.
`use_cache`	Logical to save and load from cache. If `TRUE`, the results will be cached in memory if `file` is `NULL` or on disk if 'file' is not `NULL`. Default set to `FALSE`.

file	Optional character with the full file path to save the data. Default set to NULL.
use_localhost	Logical to determine if the base URL shall be localhost instead of api.tradestatistics.io. Default set to FALSE.

Value

A tibble that describes bilateral trade metrics (imports, exports, trade balance and relevant metrics such as exports growth w/r to last year) between a reporter and partner country.

Examples

```
## Not run:
# The next examples can take more than 5 seconds to compute,
# so these are just shown without evaluation according to CRAN rules

# Run `ots_countries` to display the full table of countries
# Run `ots_products` to display the full table of products

# What does Chile export to China? (1980)
ots_create_tidy_data(years = 1980, reporters = "chl", partners = "chn")

# What can we say about Horses export in Chile and the World? (1980)
ots_create_tidy_data(years = 1980, products = "0101", table = "yc")
ots_create_tidy_data(years = 1980, reporters = "chl", products = "0101", table = "yrc")

# What can we say about the different types of apples exported by Chile? (1980)
ots_create_tidy_data(years = 1980, reporters = "chl", products = "apple", table = "yrc")

## End(Not run)
```

---

ots_groups *A table of group codes and names associated to products*

Description

Provides section names from the Harmonized System.

Usage

```
ots_groups
```

Format

A data frame with 97 observations on the following 2 variables.

group_code Group code (e.g. 01)

group_fullname_english Group name (e.g. Animals; live)

Examples

```
ots_groups
```

ots_inflation *A table with world weigthed mean inflation since 1962*

Description

Provides year to year inflations value to be applied as a conversion rate to express dollars of year Y1 as dollars of year Y2. This dataset is provided to be used with `ots_inflation_adjustment` that converts units forwards and backwards in time.

Usage

```
data("ots_inflation")
```

Format

A data frame with 56 observations on the following 3 variables.

`from` Integer values in the range 1962-2017

`to` Integer values in the range 1963-2018

`conversion_factor` Numeric value expressed as one plus 1-year inflation

Examples

```
ots_inflation
```

ots_inflation_adjustment *Expresses tidy data from the API in dollars of a reference year*

Description

Uses inflation records from The World Bank to convert trade records and express them in dollars of the same year.

Usage

```
ots_inflation_adjustment(trade_data = NULL, reference_year = NULL)
```

Arguments

`trade_data`	A tibble obtained by using ots_create_tidy_data. Default set to `NULL`.
`reference_year`	Year contained within the years specified in api.tradestatistics.io/year_range (e.g. `2010`). Default set to `NULL`.

Examples

```
## Not run:
# The next example can take more than 5 seconds to compute,
# so this is shown without evaluation according to CRAN rules

# Convert dollars of 1980 to dollars of 2010
d <- ots_create_tidy_data(years = 1980, reporters = "chl", partners = "chn")
ots_inflation_adjustment(trade_data = d, reference_year = 2010)

## End(Not run)
```

---

ots_products *A table of official product names from the Harmonized System (HS)*

Description

Provides official codes taken from the United Nations official sources. This data is provided as a reference as it's not used by the functions provided within this package, but it can be useful to subset the data obtained from the API.

Usage

```
ots_products
```

Format

A data frame with 1320 observations on the following 2 variables.

`product_code` Code of every product (e.g. 0101)

`product_fullname_english` HS product names (e.g. 'Horses, asses, mules and hinnies; live')

Examples

```
ots_products
```

---

ots_products_shortnames *A table of unofficial shortened product names*

Description

Provides shortened product names obtained from The Observatory of Economic Complexity. This data corresponds to a modified version of unofficial short names created for 4 digits HS codes.

Usage

```
ots_products_shortnames
```

Format

A data frame with 1222 observations on the following 2 variables.

`product_code` Code of every product (e.g. 0101)

`product_shortname_english` Unofficial product names (e.g. Horses)

Examples

```
ots_products_shortnames
```

---

ots_product_code *String matching of official product names and Harmonized System (HS) codes according to the United Nations nomenclature*

Description

Takes a text string and searches within the package data for all matching product codes in the context of valid API product codes.

Usage

```
ots_product_code(productname = NULL, productgroup = NULL)
```

Arguments

`productname`	A text string such as "Animals", "COPPER" or "fruits".
`productgroup`	A text string such as "meat", "FISH" or "Dairy".

Value

A tibble with all possible matches (no uppercase distinction) showing the product name and product code

Examples

```
ots_product_code(productname = "ANIMALS ")
ots_product_code(productgroup = "  fish")
ots_product_code(productname = "Milk", productgroup = "Dairy")
```

ots_product_section *String matching of official product section names and product section codes*

Description

Takes a text string and searches within the package data for all matching product communities in the context of valid API product communities

Usage

```
ots_product_section(productsection = NULL)
```

Arguments

`productsection` A text string such as "animals", or "FOODSTUFFS".

Value

A tibble with all possible matches (no uppercase distinction) showing the section name and section code

Examples

```
ots_product_section(productsection = "  Animals")
ots_product_section(productsection = "FABRIC ")
```

ots_sections *A table of sections codes, names and colours associated to products*

Description

Provides section names from the Harmonized System.

Usage

```
ots_sections
```

Format

A data frame with 1222 observations on the following 2 variables.

`product_code` Product code (e.g. 0101)

`section_code` Section code (e.g. 01)

Examples

```
ots_sections
```

ots_sections_colors *A table of sections codes and hex colours associated to products*

Description

Provides section names from the Harmonized System.

Usage

```
ots_sections_colors
```

Format

A data frame with 2 observations on the following 2 variables.

`section_code` Section code (e.g. 01)

`section_color` Colour hex code (e.g. #74c0e2)

Examples

```
ots_sections_colors
```

ots_sections_names *A table of sections codes and official names associated to products*

Description

Provides section names from the Harmonized System.

Usage

```
ots_sections_names
```

Format

A data frame with 2 observations on the following 2 variables.

`section_code` Section code (e.g. 01)

`section_fullname_english` Section name (e.g. Live Animals; Animal Products)

Examples

```
ots_sections_names
```

ots_sections_shortnames *A table of sections codes and shortened names associated to products*

Description

Provides shortened section names from The Atlas of Economic Complexity (Harvard), which are simplified names after official HS sections but keeping the same codes.

Usage

```
ots_sections
```

Format

A data frame with 22 observations on the following 2 variables.

`section_code` Section code (e.g. 01)

`section_shortname_english` Section name (e.g. Animal Products)

Examples

```
ots_sections_shortnames
```

ots_tables *Available tables in the API*

Description

A table describing existing API tables with both description and source. This data is used by the functions provided within this package to validate user parameters.

Usage

```
ots_tables
```

Format

A data frame with 15 observations on the following 3 variables.

`table` Table name

`description` Description of table contents

`source` Source for the data (OTS tables are processed after UN Comtrade raw data)

Examples

```
ots_tables
```

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