

# Package ‘tradestatistics’

March 1, 2022

**Type** Package

**Title** Open Trade Statistics API Wrapper and Utility Program

**Version** 3.0.2

**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.

**License** Apache License (>= 2)

**LazyData** TRUE

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

**RoxygenNote** 7.1.2

**Suggests** knitr, rmarkdown, tibble, testthat (>= 2.1.0), vcr, covr,  
arrow

**VignetteBuilder** knitr

**Encoding** UTF-8

**Depends** R (>= 2.10)

**NeedsCompilation** no

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Emma Mendelsohn [ctb] (updated the functions to take available years from the API instead of hardcoded values),

Natalia de los Santos [ctb] (proposed improvements to default parameters),

Elio Campitelli [ctb] (wrote parts of the client-side caching function),

Emily Riederer [rev] (reviewed the package for rOpenSci, see <https://github.com/ropensci/onboarding/issues/274>),

Mark Padgham [rev] (reviewed the package for rOpenSci, see <https://github.com/ropensci/onboarding/issues/274>),

Amanda Dobbyn [rev] (reviewed a previous package that evolved into the

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<https://github.com/ropensci/onboarding/issues/217>),  
 Jorge Cimentada [rev] (reviewed a previous package that evolved into  
 the current package for rOpenSci, see  
<https://github.com/ropensci/onboarding/issues/217>),  
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**Date/Publication** 2022-03-01 18:20:02 UTC

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ots_commodities	<i>A table of official commodity names from the Harmonized System rev 2007 (HS07, also known as H3)</i>
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## Description

Provides official commodity, group and section codes and names taken from the United Nations official sources. This data is used by the functions provided within this package to complement the data obtained from the API.

## Usage

```
ots_commodities
```

## Format

A data frame with 5151 observations on the following 6 variables.

commodity\_code Code of every commodity (e.g. 010110)

commodity\_fullname\_english HS commodity names (e.g. 'Horses, asses, mules and hinnies; live, pure-bred breeding animals')

group\_code Group code (e.g. 01)  
 group\_fullname\_english Group name (e.g. 'Animals; live')  
 section\_code Section code (e.g. 01)  
 section\_fullname\_english Section name (e.g. 'Live animals and animal products')

## Examples

```
ots_commodities
```

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ots_commodity_code	<i>String matching of official commodity/group names and Harmonized System (HS) codes according to the United Nations nomenclature</i>
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## Description

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

## Usage

```
ots_commodity_code(commodity = NULL, group = NULL)
```

## Arguments

commodity A text string such as "Animals", "COPPER" or "fruits".  
 group A text string such as "meat", "FISH" or "Dairy".

## Value

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

## Examples

```
ots_commodity_code(commodity = "ANIMALS ")
ots_commodity_code(group = " fish")
ots_commodity_code(commodity = "Milk", group = "Dairy")
```

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ots_countries	<i>A table of official country names, ISO-3 codes and other metadata</i>
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### 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 254 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	<i>String matching of official country names and ISO-3 codes according to the United Nations nomenclature</i>
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### 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_")
```

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`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 = 2019,
  reporters = "all",
  partners = "all",
  commodities = "all",
  table = "yr",
  max_attempts = 5,
  use_cache = FALSE,
  file = NULL,
  use_localhost = FALSE
)
```

**Arguments**

<code>years</code>	Year contained within the years specified in <code>api.tradestatistics.io/year_range</code> (e.g. <code>c(2002,2004)</code> , <code>c(2002:2004)</code> or <code>2002</code> ). Default set to 2019.
<code>reporters</code>	ISO code for reporter country (e.g. <code>"chl"</code> , <code>"Chile"</code> or <code>c("chl","Peru")</code> ). Default set to <code>"all"</code> .
<code>partners</code>	ISO code for partner country (e.g. <code>"chl"</code> , <code>"Chile"</code> or <code>c("chl","Peru")</code> ). Default set to <code>"all"</code> .
<code>commodities</code>	HS commodity codes (e.g. <code>"0101"</code> , <code>"01"</code> or search matches for <code>"apple"</code> ) to filter commodities. Default set to <code>"all"</code> .
<code>table</code>	Character string to select the table to obtain the data. Default set to <code>yr</code> (Year - Reporter). Run <code>ots_tables</code> 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_commodities` to display the full table of commodities

# What does Chile export to China? (2002)
ots_create_tidy_data(years = 2002, reporters = "chl", partners = "chn")

# What can we say about Horses export in Chile and the World? (2002)
ots_create_tidy_data(years = 2002, commodities = "010110", table = "yc")
ots_create_tidy_data(years = 2002, reporters = "chl", commodities = "010110", table = "yrc")

# What can we say about the different types of apples exported by Chile? (2002)
ots_create_tidy_data(years = 2002, reporters = "chl", commodities = "apple", table = "yrc")

## End(Not run)
```

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ots\_inflation

*A table with world weighed mean inflation since 2000*

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### 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 20 observations on the following 3 variables.

from Integer values in the range 2000-2019

to Integer values in the range 2001-2020

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 2010 to dollars of 2000  
d <- ots_create_tidy_data(years = 2010, reporters = "chl", partners = "chn")  
ots_inflation_adjustment(trade_data = d, reference_year = 2000)  
  
## End(Not run)
```

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ots_sections_colors	<i>A table of official section names from the Harmonized System rev 2007 (HS07, also known as H3) and unofficial colors to ease visualization</i>
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**Description**

Provides official section names taken from the United Nations official sources but the colors are absolutely unofficial and based of what I consider a good palette for 22 sections (21 + 1 for unspecified products). This data is not used by the functions provided within this package and is provided as reference.

**Usage**

```
ots_sections_colors
```

**Format**

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

```
section_fullname_english Section name (e.g. 'Live animals and animal products')
section_color Section hex color (e.g. "#74c0e2")
```

**Examples**

```
ots_sections_colors
```

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ots_tables	<i>Available tables in the API</i>
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**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 12 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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