

# Package: tradestatistics (via r-universe)

July 6, 2024

**Type** Package

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

**Version** 4.5.0

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

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

**URL** <https://docs.ropensci.org/tradestatistics/>

**BugReports** <https://github.com/ropensci/tradestatistics/issues/>

**Depends** R (>= 2.10)

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

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

**VignetteBuilder** knitr

**Encoding** UTF-8

**LazyData** TRUE

**RoxygenNote** 7.2.3

**Repository** <https://ropensci.r-universe.dev>

**RemoteUrl** <https://github.com/ropensci/tradestatistics>

**RemoteRef** master

**RemoteSha** ec0494330b1fd1e1adec824438c14646932e02e2

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|                 |                        |
|-----------------|------------------------|
| ots_commodities | <i>OTS Commodities</i> |
|-----------------|------------------------|

---

### Description

Official commodity names from the Harmonized System rev 2012 (HS12, six digits detail).

### Usage

ots\_commodities

### Format

A data frame with 5,304 observations on the following 4 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')
- section\_code Section code (e.g. 01)
- section\_fullname\_english Section name (e.g. 'Live animals and animal products')

### Source

Open Trade Statistics

---

|                       |                              |
|-----------------------|------------------------------|
| ots_commodities_short | <i>OTS Commodities Short</i> |
|-----------------------|------------------------------|

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### Description

Official commodity names from the Harmonized System rev 2012 (HS12, four digits detail).

### Usage

ots\_commodities\_short

**Format**

A data frame with 1,225 observations on the following 2 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')
- section\_code Section code (e.g. 01)
- section\_fullname\_english Section name (e.g. 'Live animals and animal products')

**Source**

Open Trade Statistics

---

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

---

**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, section = NULL)
```

**Arguments**

|           |  |
|-----------|--|
| commodity | A text string such as "Animals", "COPPER" or "fruits". |
| section   | 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(section = " fish")
ots_commodity_code(commodity = "Milk", section = "Dairy")
```

---

ots\_countries

*OTS Countries*

---

**Description**

Official country names, ISO-3 codes, continent and EU membership.

**Usage**

ots\_countries

**Format**

A data frame with 264 observations on the following 5 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_name_english` Continent where the country belongs to

**Source**

Open Trade Statistics

---

ots\_countries\_colors

*OTS Countries Colors*

---

**Description**

Unofficial colors to ease visualization for countries.

**Usage**

ots\_countries\_colors

**Format**

A data frame with 276 rows and 3 variables

- `continent_id` Numeric id of the continent where the country belongs to
- `country_iso` ISO code of the country (e.g. "chl" means Chile)
- `country_color` Section hex color (e.g. '#D05555')

**Source**

Open Trade Statistics

---

|                  |   |
|------------------|---|
| ots_country_code | <i>String matching of official country names and ISO-3 codes according to the United Nations nomenclature</i> |
|------------------|---|

---

**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 | <i>Downloads and processes the data from the API to return a human-readable tibble</i> |
|----------------------|--|

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**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",
  sections = "all",
```

```

  table = "yr",
  max_attempts = 5,
  use_cache = FALSE,
  file = NULL
)

```

### Arguments

|              |  |
|--------------|--|
| years        | 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. |
| reporters    | 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> .  |
| partners     | 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> .   |
| commodities  | 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> .                             |
| sections     | HS section codes (e.g. <code>"01"</code> ). Default set to <code>"all"</code> .  |
| table        | 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 <code>file</code> is NULL or on disk if <code>'file'</code> is not NULL. Default set to FALSE.                 |
| file         | Optional character with the full file path to save the data. Default set to NULL.  |

### 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)
```

---

|               |                      |
|---------------|----------------------|
| ots_distances | <i>OTS Distances</i> |
|---------------|----------------------|

---

### Description

Distance between countries, alongside colonial relation, common language, and continuity.

### Usage

```
ots_distances
```

### Format

A data frame with 22,791 rows and 8 variables

- country1 First ISO-3 code in the dyad (alphabetical order)
- country2 Second ISO-3 code in the dyad (alphabetical order)
- dist Distance between most populated cities (in kilometers)
- distcap Distance between capitals (in kilometers)
- colony Variable coded as 1 when the two countries are or were in a colonial relation
- comlang\_ethno Variable coded as 1 when the two countries have at least 9% of their population speaking the same language
- comlang\_off Variable coded as 1 when the two countries share the same official language
- contig Variable coded as 1 when the two countries are next to each other and 0 otherwise

### Source

Adapted from CEPII

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|                  |                     |
|------------------|---------------------|
| ots_gdp_deflator | <i>GDP Deflator</i> |
|------------------|---------------------|

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### Description

Year to year GDP deflator some of the countries in the OTS database. For countries not available in the World Bank database, rows labelled as "wld" are provided, which were computed as the weighted median for each year using the GDP of listed countries for each year expressed as constant dollars of the year 2010.

### Usage

```
ots_gdp_deflator
```

**Format**

A data frame with 7,238 observations on the following 4 variables

- country\_iso ISO code of the country (e.g. "chl" means Chile)
- fromInteger values in the range 1980-2018
- toInteger values in the range 1981-2019
- gdp\_deflator Numeric value expressed as one plus 1-year deflator

**Source**

Open Trade Statistics

---

ots\_gdp\_deflator\_adjustment

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

---

**Description**

Uses GDP deflator records from The World Bank to convert trade records and express them in dollars of the same year. The records are internally subsetting to World's values, because country specific levels would largely re-scale observations for reporters that reflect unstable macroeconomic policies.

**Usage**

```
ots_gdp_deflator_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_gdp_deflator_adjustment(trade_data = d, reference_year = 2000)

## End(Not run)
```



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|              |                     |
|--------------|---------------------|
| ots_sections | <i>OTS Sections</i> |
|--------------|---------------------|

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**Description**

Official section names from the Harmonized System rev 2012 (HS12).

**Usage**

ots\_sections

**Format**

A data frame with 22 rows and 2 variables

- `section_code` Section code (e.g. '01')
- `section_fullname_english` Section hex color (e.g. 'Live animals and animal products')

**Source**

Adapted from UN COMTRADE

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|                     |                            |
|---------------------|----------------------------|
| ots_sections_colors | <i>OTS Sections Colors</i> |
|---------------------|----------------------------|

---

**Description**

Unofficial colors to ease visualization for the sections in the Harmonized System rev 2012 (HS12).

**Usage**

ots\_sections\_colors

**Format**

A data frame with 22 rows and 2 variables

- `section_code` Section code (e.g. '01')
- `section_color` Section hex color (e.g. '#74c0e2')

**Source**

Open Trade Statistics

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`ots_tables`*OTS Tables*

---

**Description**

Existing API tables with both description and source.

**Usage**`ots_tables`**Format**

A data frame with 16 rows and 3 variables

- `table` Table name
- `description` Description of table contents
- `source` Source for the data (OTS tables are processed after UN Comtrade raw data)

**Source**

Open Trade Statistics

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