

Package ‘tidyqwi’

October 14, 2022

Title A Convenient API for Accessing United States Census Bureau's
Quarterly Workforce Indicator

Version 0.1.2

Maintainer Michael DeWitt <me.dewitt.jr@gmail.com>

Description The purpose of this package is to access the
United States Census Bureau's Quarterly Workforce Indicator data. Additionally,
the data will be retrieved in a tidy format for further manipulation with full variable
descriptions added if desired. Information about the United States Census Bureau's
Quarterly Workforce Indicator is available at
<<https://www.census.gov/data/developers/data-sets/qwi.html>>.

Depends R (>= 3.2), future (>= 1.6.2)

Imports dplyr, httr, jsonlite, magrittr, xml2, stringr, purrr, stats,
tidyr, labelled, furr

License MIT + file LICENSE

BugReports <https://github.com/medewitt/tidyqwi/issues>

Encoding UTF-8

LazyData true

RoxygenNote 7.1.0

Suggests testthat, covr, knitr, rmarkdown

VignetteBuilder knitr

NeedsCompilation no

Author Michael DeWitt [aut, cre] (<<https://orcid.org/0000-0001-8940-1967>>),
Mona Ahmadiani [aut] (<<https://orcid.org/0000-0002-1269-5685>>),
Adam S. Hyde [aut] (<<https://orcid.org/0000-0003-1205-0032>>)

Repository CRAN

Date/Publication 2020-05-04 10:30:02 UTC

R topics documented:

add_qwi_labels	2
check_census_api_call	3
converted_fips	3
get_qwi	4
industry_labels	6
nc_qwi	6
owner_codes	7
parse_qwi_message	7
qwi_var_names	8
show_condition	8
state_info	9

Index	10
--------------	-----------

add_qwi_labels	<i>add_qwi_labels</i>
----------------	-----------------------

Description

This function add labels to a ‘qwi’ object

Usage

```
add_qwi_labels(df)
```

Arguments

df an object with a class of ‘qwi’

Value

a data.frame with formatted column names and types

Examples

```
library(tidyqwi)

# Add labels
labelled_nc <- add_qwi_labels(nc_qwi)

# Check the label for the data
attr(labelled_nc[["Emp"]], "label")
```

check_census_api_call *A helper function to help parse API calls from the census*

Description

The function verifies that API call was successful. If the call was not successful, this function passes the message received from the US Census API for further troubleshooting,

Usage

```
check_census_api_call(call)
```

Arguments

call a returned call from the US Census API

Value

a string vector with the message from the US Census API

Examples

```
library(tidyqwi)
library(httr)
# A single call to the API without an API Key
url <- "api.census.gov/data/timeseries/qwi/sa?get=Emp&for=county:198&key=NOKEY"
single_call <- httr::GET(url)

# Because a non valid API key was specified an message will be returned

check_census_api_call(single_call)
```

converted_fips *A function to check if a valid state number or fips is passed*

Description

The function verifies if a valid FIPS code was passed and converts it to a unified standard for internal use.

Usage

```
converted_fips(fips)
```

Arguments

fips the state abbreviation or fips code vector

Value

States Abbreviations or FIPs as FIP character strings
a vector with the State FIPS code

Examples

```
library(tidyqwi)

converted_fips(37)
converted_fips("37")
converted_fips("NC")
converted_fips("nc")
```

get_qwi

Retrieve the Quarterly Workforce Indicator Data

Description

The purpose of this function is to retrieve firm information from the US Census' Quarterly Workforce Indicator API. These data can be retrieved with by specifying the states, the quarters, the years, and additional detail. This function can accept multiple states, years and quarters. This makes the data retrieval easier and stay inside of the US Census' limits on the API.

Usage

```
get_qwi(  
  years,  
  variables = NULL,  
  quarters = c(1, 2, 3, 4),  
  industry_level = 2,  
  states,  
  endpoint = "sa",  
  all_groups = TRUE,  
  owner_code = TRUE,  
  geography = "cbsa",  
  seasonadj = "U",  
  apikey = NULL,  
  processing = "sequential"  
)
```

Arguments

years	years to fetch (e.g. 2010, or c(2010, 2011))
variables	the variables you wish to fetch. Default is all.
quarters	The quarters to fetch (e.g. c(1,2,3,4)) Default is all
industry_level	Industries to fetch. Default is all level 2
states	state fips code to fetch
endpoint	US Census endpoint designation. One of "sa" for Sex * Age, "se" for Sex by Education and "rh" for Race/Ethnicity
all_groups	default to true
owner_code	firm owner code
geography	the US Census geography granularity (one of cbsa or county)
seasonadj	seasonal adjustment factor (one of "U" or "S")
apikey	your US Census API Key
processing	the processing strategy (default = "sequential")

Value

the desired data from the US Census's Quaterly Workforce API as a tibble

Examples

```
## Not run:
library(tidyqwi)

# One state, one year
nc_qwi <- get_qwi(years = "2010",
                 states = "11",
                 geography = "county",
                 apikey = census_key,
                 endpoint = "rh",
                 variables = c("sEmp", "Emp"), all_groups = FALSE,
                 industry_level = "2", processing = "sequential")

# Multiple states. multiple years
qwi_multi_year <- get_qwi(years = c("2010", "2011", "2012"),
                        states = c("NC", "SC"),
                        geography = "county",
                        apikey = census_key,
                        endpoint = "rh",
                        variables = c("sEmp", "Emp"), all_groups = FALSE,
                        industry_level = "2", processing = "sequential")

## End(Not run)
```

industry_labels	<i>Industry Labels</i>
-----------------	------------------------

Description

These data are the industry labels specified by the United States Census Bureau

Usage

```
industry_labels
```

Format

a dataframe with 433 rows and 3 columns:

industry Industry Numeric Code

label Description of Industry Level

ind_level Industry Level ...

Source

https://lehd.ces.census.gov/data/schema/latest/label_industry.csv

nc_qwi	<i>Example Data Set</i>
--------	-------------------------

Description

These data represent an example returned query for NC for 2010

Usage

```
nc_qwi
```

Format

a dataframe with 3244 rows and 44 columns:

`owner_codes`*Owner Codes*

Description

Owner Codes

Usage`owner_codes`**Format**

a dataframe with 3 rows and 2 columns:

ownercode ownercode**label** label ...**Source**https://lehd.ces.census.gov/data/schema/latest/label_ownercode.csv

`parse_qwi_message`*parse_qwi*

Description

An internally used function to parse the returned API call.

Usage`parse_qwi_message(x)`**Arguments**`x` a returned call response from the US Census QWI API

qwi_var_names	<i>QWI Variable Names</i>
---------------	---------------------------

Description

These data represent the different variable types available from the QWI API.

Usage

qwi_var_names

Format

a dataframe with 83 rows and 9 columns:

name state name

label state fips code

concept state abbreviation

required requirements

attributes details of attributes

limit limit

predicate type predicate type

group group level

values values ...

Source

<https://api.census.gov/data/timeseries/qwi/se/variables.html>

show_condition	<i>show_condition</i>
----------------	-----------------------

Description

show_condition

Usage

show_condition(code)

Arguments

code the code whose message you wish to interpret

state_info	<i>State Data (FIPS, Abbreviations, etc)</i>
------------	--

Description

State Data (FIPS, Abbreviations, etc)

Usage

state_info

Format

a dataframe with 51 rows and 3 columns:

name state name

state_fips state fips code

state_abbreviation state abbreviation ...

Source

<https://www.census.gov/library/reference/code-lists/ansi.html>

Index

* datasets

- industry_labels, 6
- nc_qwi, 6
- owner_codes, 7
- qwi_var_names, 8
- state_info, 9

add_qwi_labels, 2

check_census_api_call, 3

converted_fips, 3

get_qwi, 4

industry_labels, 6

nc_qwi, 6

owner_codes, 7

parse_qwi_message, 7

qwi_var_names, 8

show_condition, 8

state_info, 9