



KENOMETRICS

A PROJECT OF THE UNIVERSITY OF KENT



An introduction to the **Quandl** API

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1 Enable access to Quandl

1. Email `econit@kent.ac.uk` and request access to the Quandl database
2. Check your email and sign up to accept the University of Kent and Quandl invitation
3. Follow the instructions to sign up and record/write down your unique **API key**

API key

Your unique **API key** is important. Each time you wish to access data from the Quandl database you will need to provide your **API key** in order to authenticate the data download.

More information can be obtained from Quandl documentation here: <https://docs.quandl.com/docs>.

2 Accessing data through your web browser

Data can be accessed through your web-browser. All we do is submit a web address (URL) with the correct parameters related to the data we wish to download. For example, if we want to download GDP time series data for the UK, we enter:

https://www.quandl.com/api/v3/datasets/SGE/GBRG?api_key=YOURAPIKEY

where YOURAPIKEY is replaced with your unique API key. Let's break this URL down into four components.

- URL scheme specifier: `https:`
- Network location: `//www.quandl.com`
- Hierarchy path: `/api/v3/datasets/SGE/GBRG`
- Query component: `?api_key=YOURAPIKEY`

The URL scheme specifier is the protocol for accessing the internet, the network location is simply the address of Quandls website, the hierarchy path is where our data is located on Quandls servers, and finally the query component is any additional information which helps Quandl servers process our request and return the data back to us. In this case, we need to tell Quandl who we are by providing them with our unique API key.

2.1 Selecting your data

Our example accesses the **Trading Economics Standardized Global Economics (SGE)** data feed, which contains 8,000+ time-series, covering 200+ countries and 200+ macroeconomic indicators. We specify the database we wish to access by including SGE in the hierarchy. We then specify the exact data we want by adhering to the following format:

- Hierarchy path: `/api/v3/datasets/SGE/{Country_ISO}{Indicator_Code}`

Where

- `{Country_ISO}` is an ISO 3-letter country code, except for European Union (EU). The list of ISO country codes is available here https://s3.amazonaws.com/quandl-production-static/coverage/SGE_country_iso.csv
- `{Indicator_Code}` is a harmonized indicator code for the required data. The list of all indicator codes is available here https://s3.amazonaws.com/quandl-production-static/coverage/SGE_indicator_codes.csv

We can download and search the files given in the links above and find the `{Country_ISO}` for the United Kingdom is GBR, and for GDP is G. Submitting the complete URL in a web-browser will cause the relevant data to appear in your web-browser.

3 Downloading data into Excel

If you are familiar with different data storage types, you will recognise the data in the browser as a `json` file format. If you are not familiar with this, do not worry. We can actually force Quandl to return the data to us as comma separated values (`csv`), which we can then open with `Excel`.

To do this, we make one simple change to the hierarchy path which will tell Quandl that we want the data returned to us in `csv` format. Once we submit this request, a `csv` file containing the data should begin downloading into your downloads folder. To achieve this, we simply add `/data.csv` to the end of the hierarchy:

- Hierarchy path: `/api/v3/datasets/SGE/GBRG/data.csv`

and the full URL becomes (again replacing `YOURAPIKEY` with your unique `API key`):

https://www.quandl.com/api/v3/datasets/SGE/GBRG/data.csv?api_key=YOURAPIKEY

4 Filtering downloads by date

We can also add filters to our requests which means changing the query component. Here, we access the same data in the same location, but now we change how that data is returned to us. Let's download annual GDP data for the UK over the period 31/12/2014 to 31/12/2019. To do this, the URL is:

https://www.quandl.com/api/v3/datasets/SGE/GBRG/data.csv?start_date=2014-12-31&end_date=2019-12-31&api_key=YOURAPIKEY

And breaking this down gives four components.

- URL scheme specifier: `https:`
- Network location: `//www.quandl.com`
- Hierarchy path: `/api/v3/datasets/SGE/GBRG`
- Query component: `?start_date=2014-12-31&end_date=2019-12-31&api_key=YOURAPIKEY`

Now we have added a start date and end date to our query. This tells Quandl to only return data within these dates. Queries must adhere to a specified format, `{parameter}={value}` where `{parameter}` corresponds to the specific filter and `{value}` is the values that we wish to filter on. So for the start and end date, the parameter-value pairings are:

- `start_date=yyyy-mm-dd`
- `end_date=yyyy-mm-dd`

Each additional filter is separated by an ampersand (&), and a full list of parameters can be found in the Quandl documentation located here <https://docs.quandl.com/docs/parameters-2>.