

A NOTE ON DB·nomics with MATLAB

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1. What is DB·nomics?

DB·NOMICS gives access to datasets supplied by many institutions through one web interface. It does not replace the original provider: before using a series, verify its definition, unit, frequency, seasonal adjustment, coverage, revision policy and licence. Record the source provider and the access date in every reproducible empirical project.

To find a series, open [db.nomics.world](https://db-nomics.world), select a provider and dataset, then inspect the series page and its dimensions. Copy the identifier shown in the URL exactly. It is called a *slug* and has the form

`provider/dataset/series.`

For example, the monthly Austrian HICP annual rate excluding energy is:

`Eurostat/prc_hicp_manr/M.RCH_A.TOT_X_NRG.AT.`

The slug is an identifier, not a search phrase: an incorrect character or a missing dimension produces no series.



2. Installation and first request

The only MATLAB interface used in this note is `call_dbnomics.m`. Put it in the MATLAB current folder, or add its folder to the path. MATLAB must have `webread` and Internet access. No DBnomics account, API key or credential is required.

```
addpath('path/to/the/folder/containing/call_dbnomics')
[output_mat, output_table, dates_nb] = call_dbnomics( ...
    'Eurostat/prc_hicp_manr/M.RCH_A.TOT_X_NRG.AT');
```

The function signature is

```
[output_mat, output_table, dates_nb] = call_dbnomics(slug1, slug2, ...)
```

All requested slugs must have the same frequency. The function downloads the series, sorts their periods, aligns them on the union of dates and leaves a missing observation as `NaN`.

- `output_mat`: first column = MATLAB `datetime` dates; remaining columns = observations.
- `output_table`: same observations in a MATLAB table; row names are period labels and column names are the final dimension codes (for example `AT` and `BE`). MATLAB makes repeated names unique.
- `dates_nb`: a readable numeric date vector: 2000, 2000.25, 2000.50 for quarterly data; 2000.00, 2000.08, ... for monthly data.

3. One series

The first example downloads Austrian inflation. The second matrix column holds the observations; its first column holds the dates.

```
[mat, tab, dates] = call_dbnomics( ...
    'Eurostat/prc_hicp_manr/M.RCH_A.TOT_X_NRG.AT');
inflation_AT = mat(:,2);
```

Inspect `tab(1:5,:)` and the last rows before transforming a series. Do not confuse a rate of change, an index level and a seasonally adjusted level.

4. Several countries

Within a dimension, + expands several codes. The following request, from the historical examples, returns four columns: AT, BE, DE and FR.

```
[mat, tab] = call_dbnomics( ...  
    'Eurostat/prc_hicp_manr/M.RCH_A.TOT_X_NRG.AT+BE+DE+FR');
```

If country coverage differs, the unmatched dates are represented by **NaN**. A missing value is not zero: do not interpolate, forward-fill or drop dates without a documented economic and statistical reason.

5. Several series and alignment

Pass several slugs as separate MATLAB arguments. This example requests two monthly HICP measures for Austria and Germany:

```
[mat, tab] = call_dbnomics( ...  
    'Eurostat/prc_hicp_manr/M.RCH_A.TOT_X_NRG.AT+DE', ...  
    'Eurostat/prc_hicp_manr/M.RCH_A.TOT_X_TBC.AT+DE');  
complete = all(~isnan(mat(:,2:end)),2);
```

The function does not silently aggregate or disaggregate. Download different frequencies separately, then state and justify any conversion. When names are repeated, use `tab.Properties.VariableNames` to inspect the resulting column names rather than assuming an order.

6. Plotting

The table output makes labels and country names explicit. This complete script reproduces the historical comparison plot:

```
[~, tab] = call_dbnomics( ...  
    'Eurostat/prc_hicp_manr/M.RCH_A.TOT_X_NRG.AT+BE+DE+FR');  
t = datenum(tab.Properties.RowNames);  
countries = tab.Properties.VariableNames;  
figure  
plot(t,tab.AT,t,tab.BE,t,tab.DE,t,tab.FR)  
datetick('x','yyyy','keeplimits')  
legend(countries,'Location','best')  
title('Inflation excluding energy')  
ylabel('Annual percentage change')
```

7. Errors and a reproducible workflow

InvalidSlug or NoSeries Copy the three-part slug again from the DBnomics page and check every dimension.

RequestFailed Check the Internet connection and open the slug in a browser. DBnomics or its provider may be temporarily unavailable.

MixedFrequency Download each frequency separately. A frequency conversion is a modelling decision, not a download option.

UnsupportedFrequency The function accepts daily, monthly, quarterly and annual period conventions. Inspect any unfamiliar period format.

NaN Preserve it until a missing-data rule is justified and documented.

For each final result, keep the slug, URL, provider, access date, frequency, units, transformations and missing-value treatment alongside the MATLAB code. Cite the original provider as well as DBnomics when appropriate.