

Utilising our external APIs

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Introduction

Paper: My experiences serving API to external users

Presentation:

1. Real world API examples
2. Don't reinvent the wheel, open source tools for using our APIs
3. Tools example

Why API?

- Most nordic NSIs use PxWeb and share the same API, PxWebApi
- API provides access to our statbanks and data through machine to machine communication
- The user can customise the query and data within their own software environment

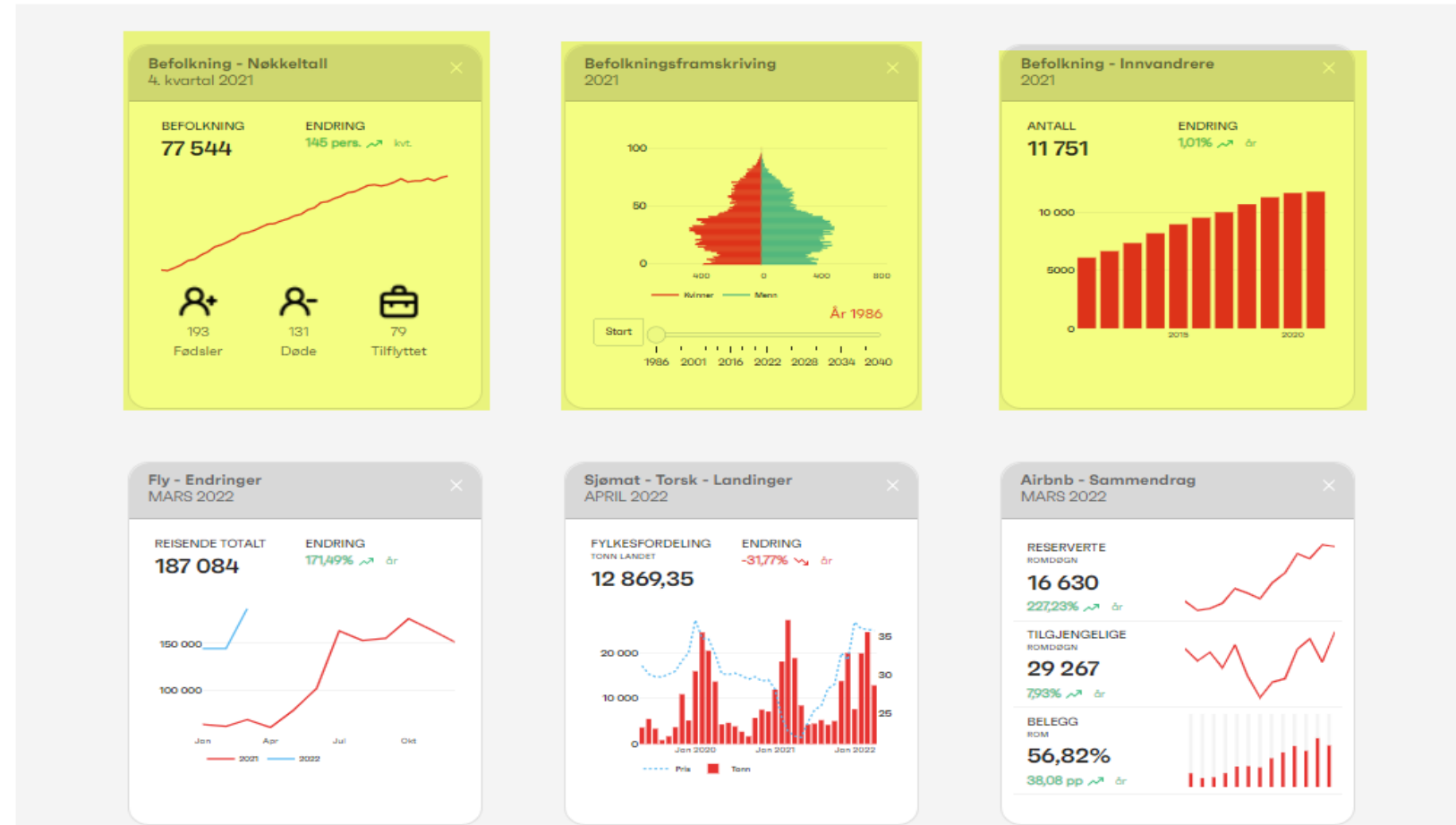
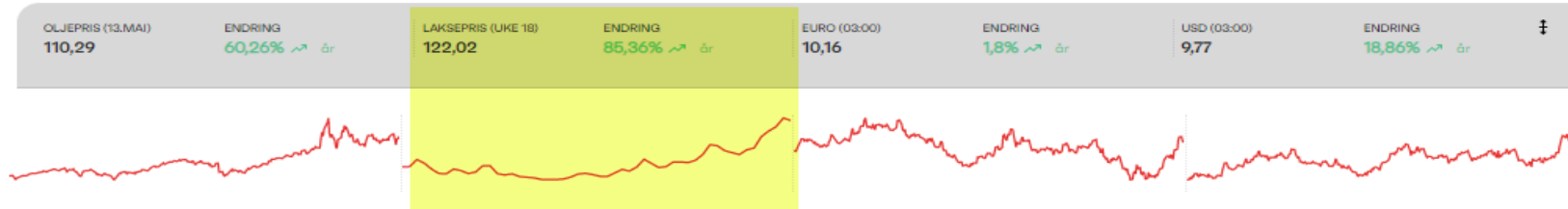
Api example 1 - Bloomberg one-liner

2022M03 Not - 138 371

NORWAY MARCH TRADE SURPLUS NK138.4 BLN

- Data assisted economic journalism

API-example 2 - Kunnskapsbanken Nord-Norge



Yellow: SSB API data

Do not reinvent the wheel

- Reduce learning curve
- Use and improve the Statbank API-tools
 - See appendix

Annex

A list of tools for utilizing our APIs

Name	API output format	language	
rjstat	JSON-stat	R	ht
PxWebApiData	JSON-stat	R	h
JSON-stat Toolkit	JSON-stat	Javascript	h
Pyjstat	JSON-stat	Python	h
jsonstat.py	JSON-stat	Python	h
Tableau WDC	JSON-stat	Tableau	h
json-stat.java	JSON-stat	Java	h
JSONStat.jl	JSON-stat	Julia	h
Stats-to-pandas	JSON-stat	Python	h
SSB_API_helper	JSON-stat	Python	h
PxWebApiData call creator	JSON-stat	R	h
PxR	Px	R	h
pyaxis	Px	Python	h
PxWeb	SCB-JSON	R	h
pyscbwrapper	SCB-JSON	Python	h
Q4OpenData	SCB-JSON	Excel/PowerB	h
getstatbanktable	CSV	SAS	h

Other links

Name	format	language	Li
Awesome official statistics software			
ERC (Economic RESTful Client)		JavaScript	

Tools example: From PxWeb via API to R

2022M06	Statbank table	0.9	6.3
2022M07			

PxWebApiData call creator

Footnotes

API query for this table

Send (POST) the following JSON query to the URL below

URL:

`https://data.ssb.no/api/v0/en/table/03013/`

JSON query:

```
{
  "query": [
    {
      "code": "Konsumgrp",
      "selection": {
        "filter": "vs:CoiCop2016niva1",
        "values": [
          "TOTAL"
        ]
      }
    },
    {
      "code": "ContentsCode",
      "selection": {
        "filter": "item",
        "values": [
          "KpiIndMnd",
          "Manedsendring",
          "Tolvmanedsendring"
        ]
      }
    }
  ]
}
```

This app converts the URL and JSON provided by Statistics Norway into an `ApiData` function call.

The api endpoint URL

`https://data.ssb.no/api/v0/en/table/13332/`

The API request JSON

```
{
  "query": [
    {
      "code": "Alder",
      "selection": {
        "filter": "item",
        "values": [
          "15-24",
          "25-74"
        ]
      }
    }
  ]
}
```

```
ApiData("https://data.ssb.no/api/v0/en/table/13332/",
  Alder=list('item', c("15-24", "25-74")),
  ContentsCode=list('item', c("Arbeidslause2")),
  Kjonn=FALSE,
  Tid=TRUE)
```

Paste

1

copy

2

paste

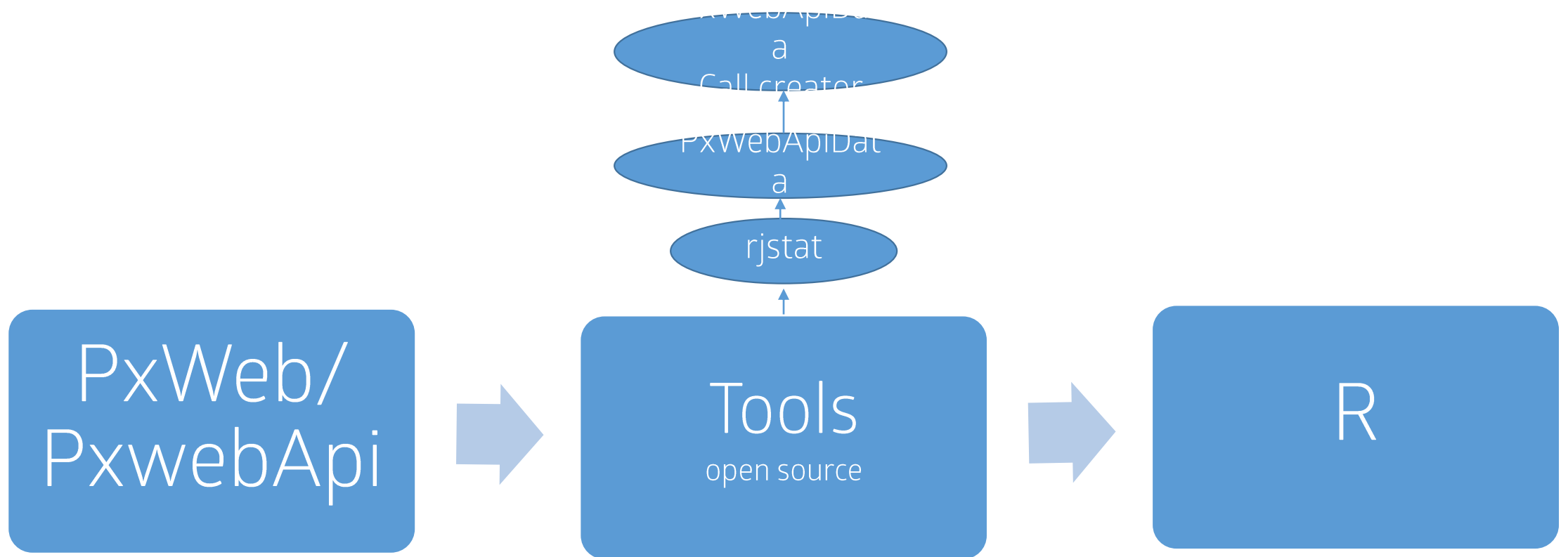
RStudio interface showing the R code generated from the API call creator and the resulting data output in the console.

```
1 library(PxwebApiData)
2 ApiData("https://data.ssb.no/api/v0/en/table/13332/",
3         Alder=list('item', c("15-24", "25-74")),
4         ContentsCode=list('item', c("Arbeidslause2")),
5         Kjonn=FALSE,
6         Tid=TRUE)
```

Console output:

```
R 4.1.1 ~ /
[workspace loaded from ~/.RData]
> library(PxwebApiData)
> ApiData("https://data.ssb.no/api/v0/en/table/13332/",
+         Alder=list('item', c("15-24", "25-74")),
+         ContentsCode=list('item', c("Arbeidslause2")),
+         Kjonn=FALSE,
+         Tid=TRUE)
$13332: Employment, unemployment, labour force and break and man-weeks worked for person
s aged 15-74, by age, contents and month
      age      contents      month      value
1 15-24 years Unemployment (LFS) (1 000 persons), seasonally adjusted 2006M02      40
2 15-24 years Unemployment (LFS) (1 000 persons), seasonally adjusted 2006M03      42
3 15-24 years Unemployment (LFS) (1 000 persons), seasonally adjusted 2006M04      42
4 15-24 years Unemployment (LFS) (1 000 persons), seasonally adjusted 2006M05      41
5 15-24 years Unemployment (LFS) (1 000 persons), seasonally adjusted 2006M06      29
```

From Statbank via API to application



Appendix for list of tools

Name	API output format	language
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PxWebApiData call creator	JSON-stat	R
PxR	Px	R
pxrsc	Px	Python
PxWeb	SCB-JSON	R
pxscwrapper	SCB-JSON	Python
Q4OpenData	SCB-JSON	Excel/Power


Other links

Name	format	language
Awsome official statistics software		
ERC (Economic RESTful Client)		JavaScript

Most API users are not professional developers

- To build competence we have done:
 - Help and resource pages.
 - Code examples in R, Python, JavaScript, also as Jupyter notebooks.
 - Half day courses (physical and online) 3-8 times a year, (400 participants)
 - [Short and long videos](#)
 - User support by statistikkbanken@ssb.no
 - Mailing list – a few times a year about news and big changes to the tables
 - Participation at user meetings, seminars etc.
 - Hacks – national and local at Statistics Norway
 - Social media (Twitter, LinkedIn)

Check out Statistics Norway's API pages, ssb.no/api

 Statistisk sentralbyrå
Statistics Norway

Search

> Labour market, earnings & education > Population & housing > Health & society > Environment & transport > Business & technology > Economy


[Home](#) / [API](#) / API: Create your own datasets

API: Create your own datasets (PxWebApi)

API for queries towards all StatBank Norway's 6000 tables. Output formats are JSON-stat, csv and xlsx. Use the Console or http POST towards the table metadata to query.

Tip: This API use http POST to query. See:


[API User manual \(665.8 KB\)](#)



API console

Generate, edit query code and run queries.


[→](#)



Traverse API dataset metadata

Traverse JSON metadata down to table metadata


[→](#)



API code examples

How to use the API with libraries for R, Python and Javascript/Highcharts.

[→](#)

 Statistisk sentralbyrå
Statistics Norway

Søk

> Arbeid, lønn og utdanning > Befolkning og bolig > Helse og samfunn > Miljø og transport > Næringsliv og teknologi > Økonomi

[Forsiden](#) / [API](#) / pxwebapi


API: Lag egne datasett (PxWebApi)

API for egne spørringer mot alle Statistikkbankens 6000 tabeller. Utformater er JSON-stat, csv og xlsx.

Bruk API-konsoll eller http POST mot en statistikkbanktabell sine metadata for å spørre.

Tips: Siden dette API-et bruker POST for å få data, Se


[API brukerveiledning \(931.3 KB\)](#)



API-konsoll

Konsoll for å lage, teste og kjøre spørringer


[→](#)



API: Naviger i metadata

Søk og traverser API-strukturen

[→](#)



Kode eksempler

API-eksempler for å hente data i Javascript, Python, R og Excel

[→](#)

Slides fra API-kurs, februar 2022.

[API kurs slides \(1.4 MB\)](#)