

R in Production

KOF Swiss Economic Institute
Matthias Bannert (@whatsgoodio)



Personal 1st encounter with R

2004



2008

KOF starts
to consider R



Open Source Driven Data Science hits
Social Sciences



2010



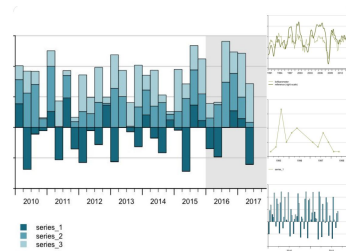
2014



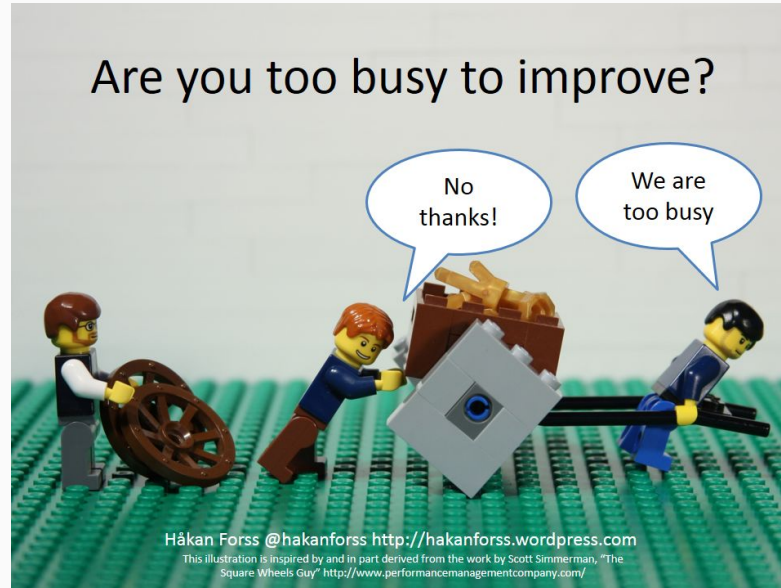
Open Source Driven Data
Pipelines @KOF

2017-2019

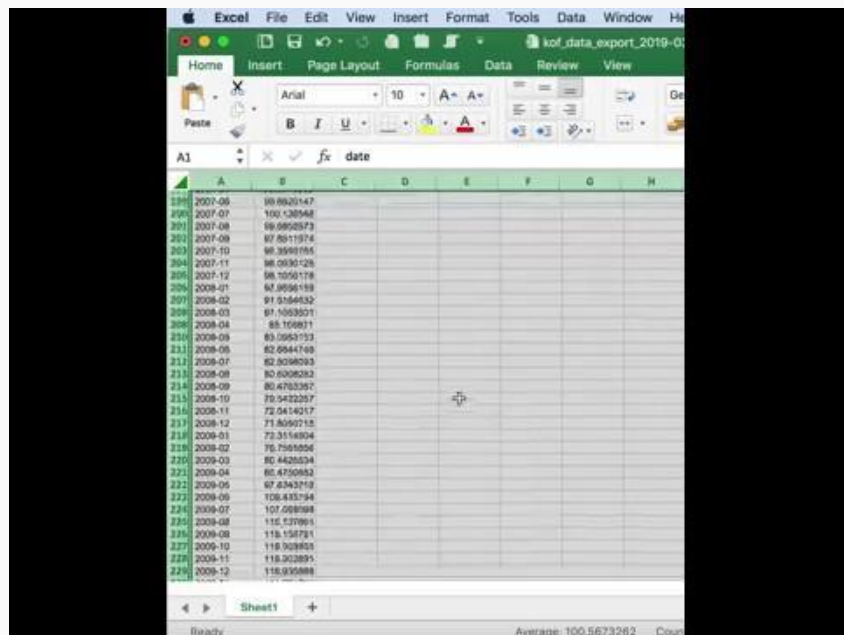
KOF launches own R Package to manage
and archive time series.



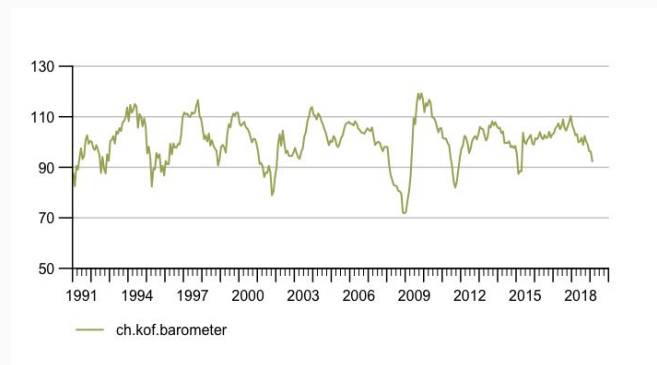
Challenge: Busy People



Challenge: Codephobia



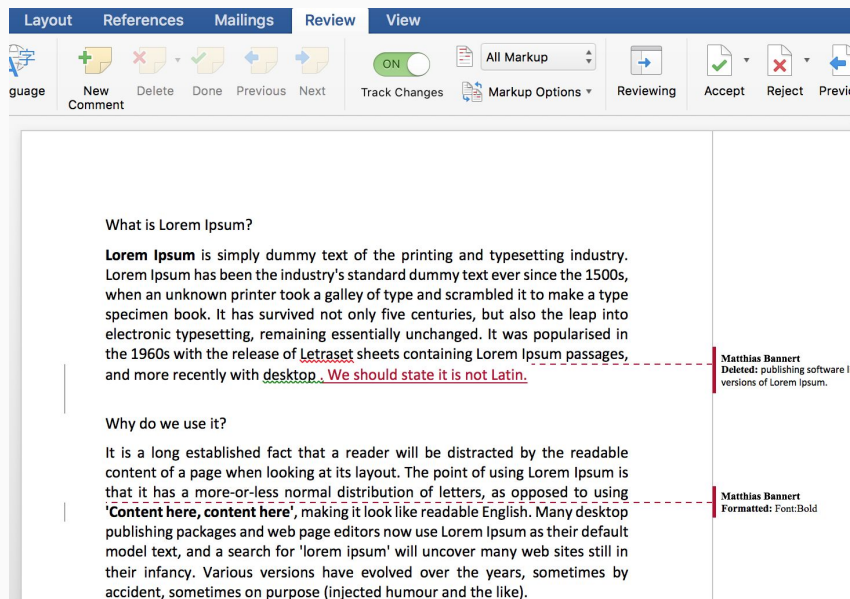
```
library(kofdata)
library(tstools)
tsplot(
  get_time_series("ch.kof.barometer"
))
```





Source: GFYCAT, <https://gfycat.com/allwarlikegermanpinscher>

Challenge: Reporting



```
\documentclass{report}
```

```
\usepackage{lipsum}
```

```
\begin{document}
```

```
\chapter{Introduction}
```

```
\lipsum[2-4]
```

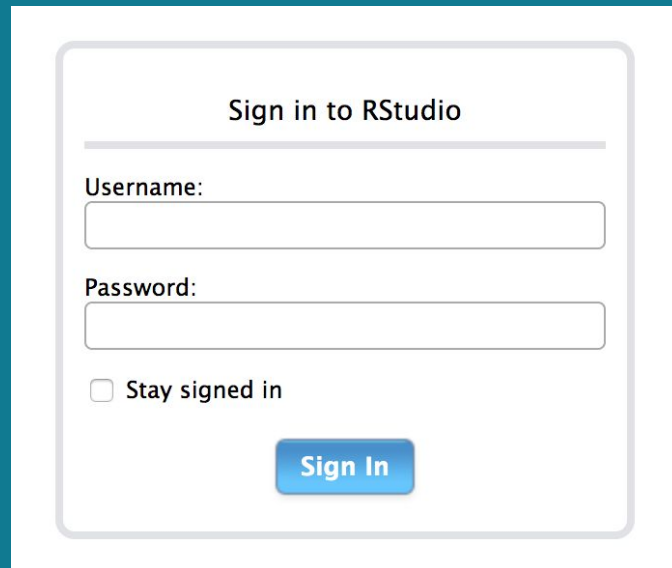
```
\end{document}
```

Open Source Environment

Keys to Acceptance

- R Studio Server
- Deployment
- Prototypes

R Studio Server



A screenshot of the RStudio Server sign-in interface. The form is titled "Sign in to RStudio" and is enclosed in a light gray rounded rectangle. It features two input fields: "Username:" and "Password:". Below the password field is a checkbox labeled "Stay signed in". At the bottom right of the form is a blue "Sign In" button.

Sign in to RStudio

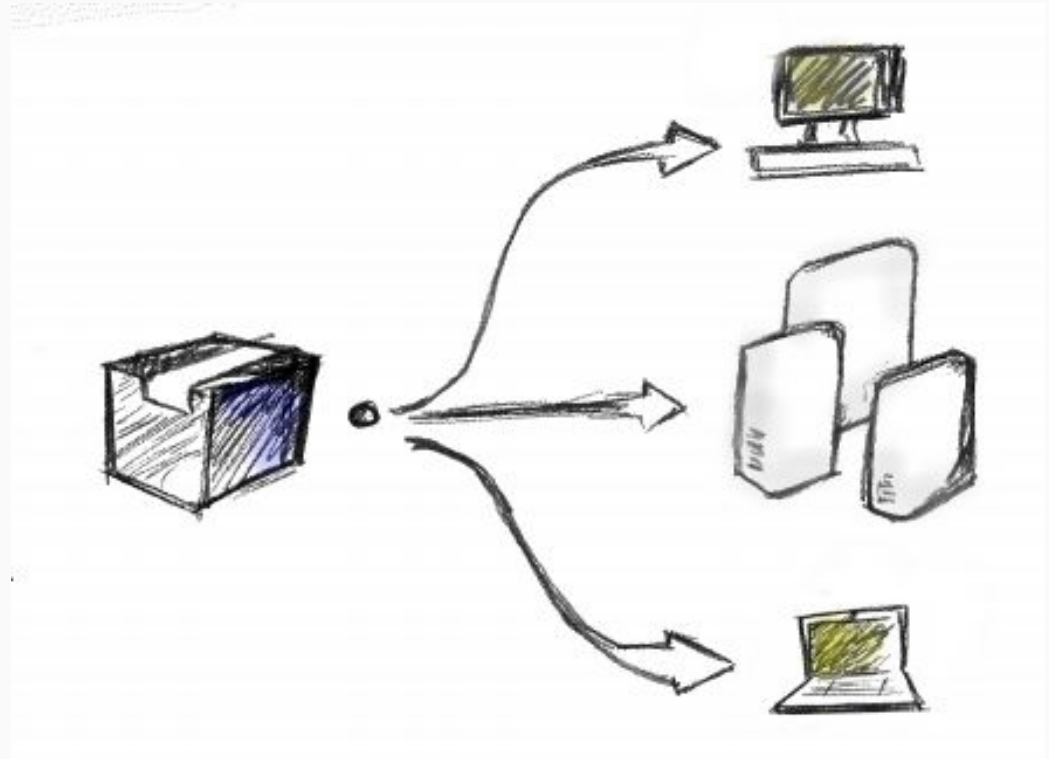
Username:

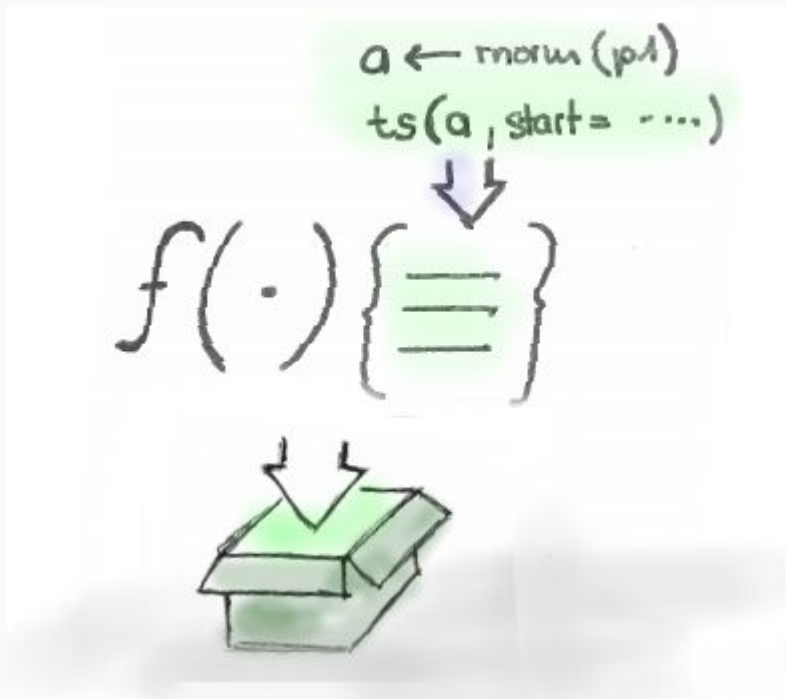
Password:

☐ Stay signed in

Sign In

Make sure your
deployment
process is
smooth.





Deployment in R

- organize code in functions
- follow conventions
- document properly (examples)

Deployment in R

Instead of

```
a <- 2
```

```
b <- 30
```

```
d <- 10
```

```
x <- a + b
```

```
x*d
```

```
#' Do this and that cause this and that  
was missin
```

```
#'
```

```
#' add an multiply useless stuff.
```

```
#' @param a integer some desc
```

```
#' @param b integer some desc
```

```
#' @param d integer some desc
```

```
#' @export
```

```
f <- function(a,b,d) {
```

```
  x <- a + b
```

```
  x*d
```

```
}
```

```
f(2,30,10)
```

```
f(4,40,20)
```

Use Prototypes.

Unit test vs. Integration test



“Premature optimization is
the root of all evil.”

Donald Knuth

How to Build Prototypes?



Codephopia & Busy People

- R Studio Server
- code reviews,
- Workshops
- convenience packages

People start ♥ Code!

- automatic
- reproducible
- collaborative

=> lower hurdles

Reporting

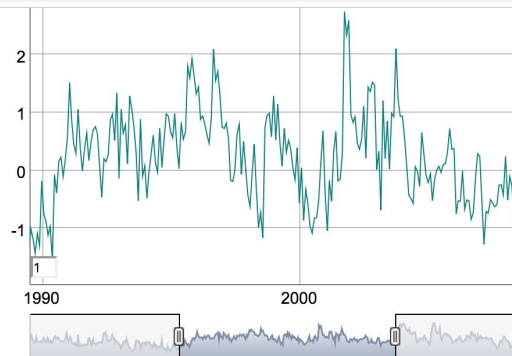
<https://www.kof.ethz.ch/prognosen-indikatoren/indikatoren/kof-unsicherheitsindikator.html>

KOF Surprise Indicator

KOF-Baublatt-Ausblick

KOF Jugendarbeitsmarkindex

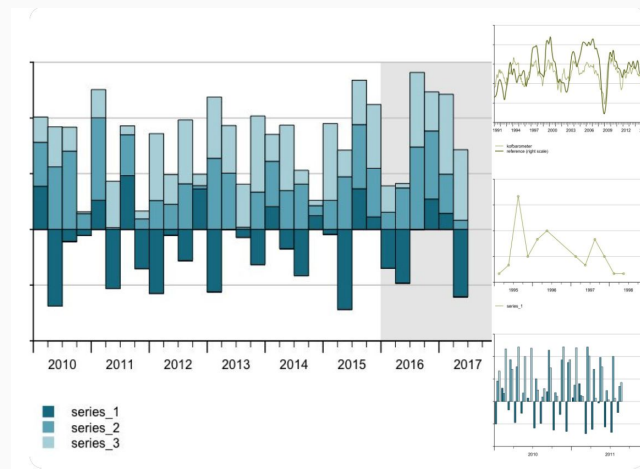
KOF Unsicherheitsindikatoren



Theil Disagreement

Show Data

- ✓ All sectors
- Manufacturing Industries
- Retail Trade
- Restaurant and Hotels
- Construction
- Project Engineering



Outlook

←
→
↻
localhost:3000
☆

Datenprovider

KOF Konjunkturforschungsstelle

Umfrage

Umfrage Detailhandel

Sektorklassifikation

Fragentyp

qualitative Frage mit 3-er Skala

Frageelement

Saldo (in %)

Region

Aggregationslevel

Saisonbereinigung

Bootstrap

Gesch

Q

Frage 3 of 3 shown	Geschäftslage, erwartete Änderung nächste 6 Monate 411 time series
	Geschäftslage, Urteil 178 time series
	Geschäftslage, Änderung letzte 3 Monate 137 time series
Time series 4 of 28'602 shown	ch.kof.inu.ng08.fx.sector_mig.cons_dr.q_ql_ass_bs.share_pos Frage Geschäftslage, Urteil
	ch.kof.fvu.ng08.fx.q_ql_ass_bs.balance Frage Geschäftslage, Urteil
	ch.kof.inu.ng08.fx.sector_3d.133.q_ql_ass_bs.share_pos Frage Geschäftslage, Urteil
	ch.kof.inu.ng08.fx.sector_3d.261.q_ql_ass_bs.share_pos Frage Geschäftslage, Urteil

useR @Toulouse, France July 9-12