Hello Qoma Smuggler!

The R package *qoma.smuggler* provides high-level access to the FAME HLI. To open the FAME HLI,

```r
library(ggplot2)
library(qoma.smuggler)

if(!open_hli())knitr::knit_exit()
```

```
Linux 4.9.0-4-amd64 #1 SMP Debian 4.9.65-3+deb9u1 (2017-12-23) GNU/Linux

R version 3.5.0 (2018-04-23)
Joy in Playing
x86_64-redhat-linux-gnu

lubridate        1.7.4
qoma.smuggler    0.0.1
rhli             0.0.2.9000
tibble           1.4.2
FAME HLI         11.63000
```

To move FAME data across the border to R, provide a database name:

```r
dbname <- paste(Sys.getenv("FAME"),"util","driecon.db",sep="/")
cat(dbname)
```

```
/opt/pkg/fame116linux/util/driecon.db
```

Read the database into a *qoma.smuggler* List:

```r
famedata <- read_fame(dbname)
```

```
read_fame() returns 55 objects from /opt/pkg/fame116linux/util/driecon.db
```

To display all the contents as a catalog,

```r
print_catalog(famedata,list.len=3)
```

```
SERIES $N : PRECISION BY DATE(ANNUAL) 1930 to 2002
POPULATION INCLUDING ARMED FORCES OVERSEAS (P25E)
-
POPULATION INCLUDING ARMED FORCES OVERSEAS (P25E)
MILLIONS OF PERSONS, ESTIMATES ARE FOR JULY 1
U.S. DEPARTMENT OF COMMERCE, BUREAU OF THE CENSUS
CURRENT POPULATION REPORTS, SERIES P-25
INCLUDING ALASKA AND HAWAII BEGINNING IN 1940

SERIES BOPMERCH : PRECISION BY DATE(ANNUAL) 1960 to 2002
US INTERNATIONAL TRANSACTIONS - BALANCE ON GOODS (BOP)
-
US INTERNATIONAL TRANSACTIONS - BALANCE ON GOODS (BOP)
BILLIONS OF CURRENT DOLLARS
U.S. DEPARTMENT OF COMMERCE, BUREAU OF ECONOMIC ANALYSIS
U.S. INTERNATIONAL TRANSACTIONS

SERIES CUSA0 : PRECISION BY DATE(MONTHLY) Jan1947 to Jul2003
```

```
CPI (ALL URBAN) - ALL ITEMS
-
CPI (ALL URBAN) - ALL ITEMS
INDEX BASE:  1982-84=1.00, SEASONALLY ADJUSTED
CALCULATED BY DRI USING SEASONAL FACTORS PROVIDED BY
US DEPT OF LABOR, BUREAU OF LABOR STATISTICS
```

```
[catalog output truncated, 52 more entries not displayed because list.len=3]
```

You may display individual object's meta data from a *qoma.smuggler* `List`.

```
cat(famedata$get_meta('GDP'))
```

```
SERIES GDP : PRECISION BY DATE(ANNUAL) 1929 to 2002
GROSS DOMESTIC PRODUCT
-
GROSS DOMESTIC PRODUCT
BILLIONS OF CURRENT DOLLARS
U.S. DEPARTMENT OF COMMERCE, BUREAU OF ECONOMIC ANALYSIS
'SURVEY OF CURRENT BUSINESS' AND OTHER MATERIALS
U.S. NATIONAL INCOME & PRODUCT ACCOUNTS - TABLE 1.1,1.3,1.5,1.9
```

FAME series are accessible as a `tibble` structure with dates expressed as *lubridate* package structures `Date`:

```
tbl<-famedata$get_data('GDP')
str(tbl)
```

```
Classes 'tbl_df', 'tbl' and 'data.frame':   74 obs. of  2 variables:
 $ date: Date, format: "1929-12-31" "1930-12-31" ...
 $ GDP : num  103.7 91.3 76.6 58.8 56.4 ...
```
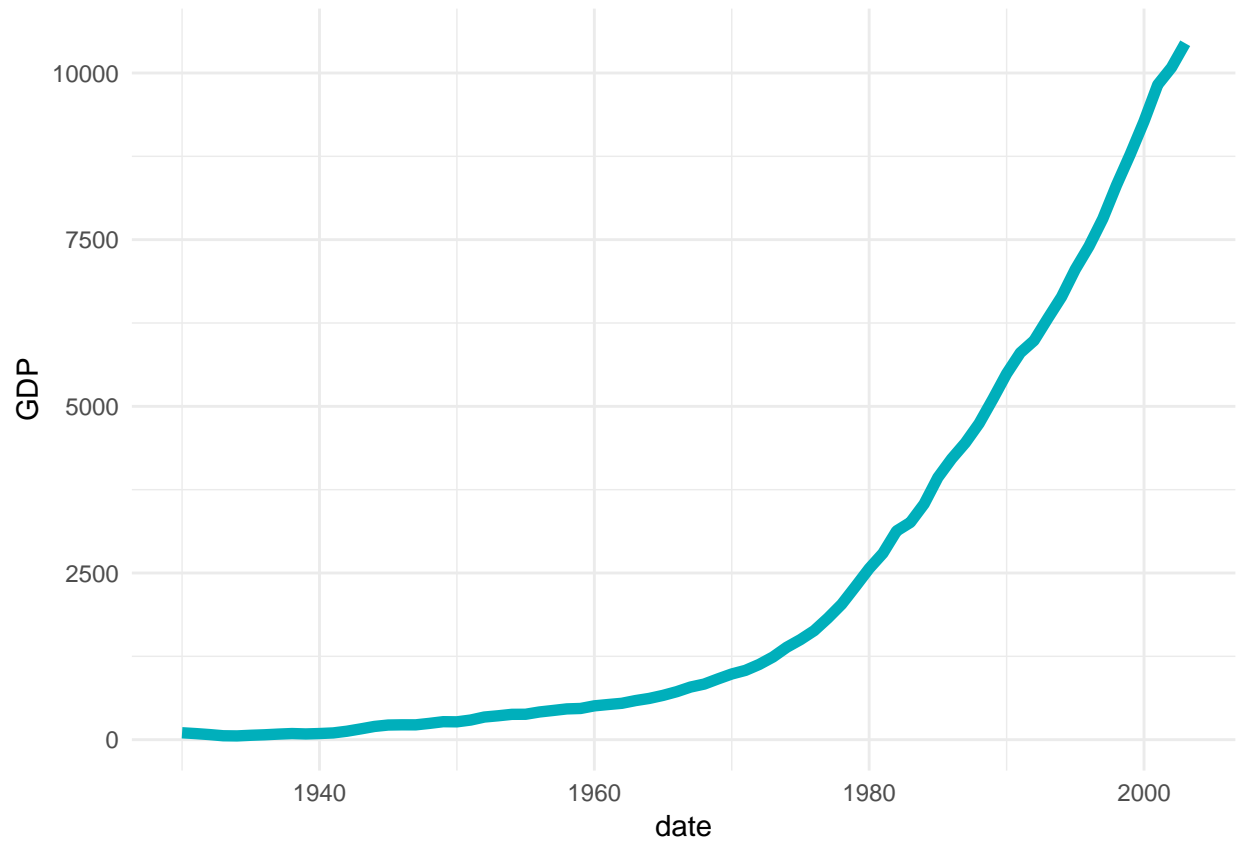
The *tibble* package is part of the *tidyverse* ecosystem and works well with packages such as *ggplot*.

```
theme_set(theme_minimal())
ggplot(data = tbl, aes(x = date, y = GDP))+
  geom_line(color = "#00AFBB", size = 2)
```

To move R data back across the border to FAME,

```
mydb <- file.path(tempdir(),"mycopy.db")
write_fame(mydb,famedata)
```

write_fame() stored 55 objects in /tmp/Rtmp5TAE2Q/mycopy.db

[1] TRUE

When you complete your work, close the FAME HLI to avoid data loss,

```
close_hli()
```

[1] TRUE

```
file.remove(mydb)
```

[1] TRUE