Innlevering-3.R

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2022-10-04

```
#Samarbeidet med Marthe Moe og Nikolay Lekhmus om koden

rm(list = ls())

library(rjstat)
library(tidyverse)
```

```
## -- Attaching packages --------------------------------------- tidyverse 1.3.2 --
## v ggplot2 3.3.6      v purrr   0.3.4
## v tibble  3.1.8      v dplyr   1.0.10
## v tidyr   1.2.0      v stringr 1.4.1
## v readr   2.1.2      v forcats 0.5.2
## -- Conflicts ------------------------------------------ tidyverse_conflicts() --
## x dplyr::filter() masks stats::filter()
## x dplyr::id()     masks rjstat::id()
## x dplyr::lag()    masks stats::lag()
```

```
library(httr)
library(PxWebApiData)
library(ggplot2)
library(OECD)
library(dplyr)
library(ggrepel)
library(zoo)
```

```
##
## Attaching package: 'zoo'
##
## The following objects are masked from 'package:base':
##
##     as.Date, as.Date.numeric
```

```
library(ggthemes)

# Utfordring 3.1
# Oppgave 1
options(encoding="UTF-8")
url <- "https://data.ssb.no/api/v0/no/table/11155/"

data <- '{"query": [{"code": "Kjonn","selection": {"filter": "item","values":
      ["0","1","2"]}},{"code": "Alder","selection": {"filter": "item","values":
          ["15-74","20-64","20-66","15-24","25-39","40-54","55-74"]}},
      {"code": "UtdNivaa","selection": {"filter": "item","values":
          ["TOT","1-2","3-5","6-8"]}}],"response":
```

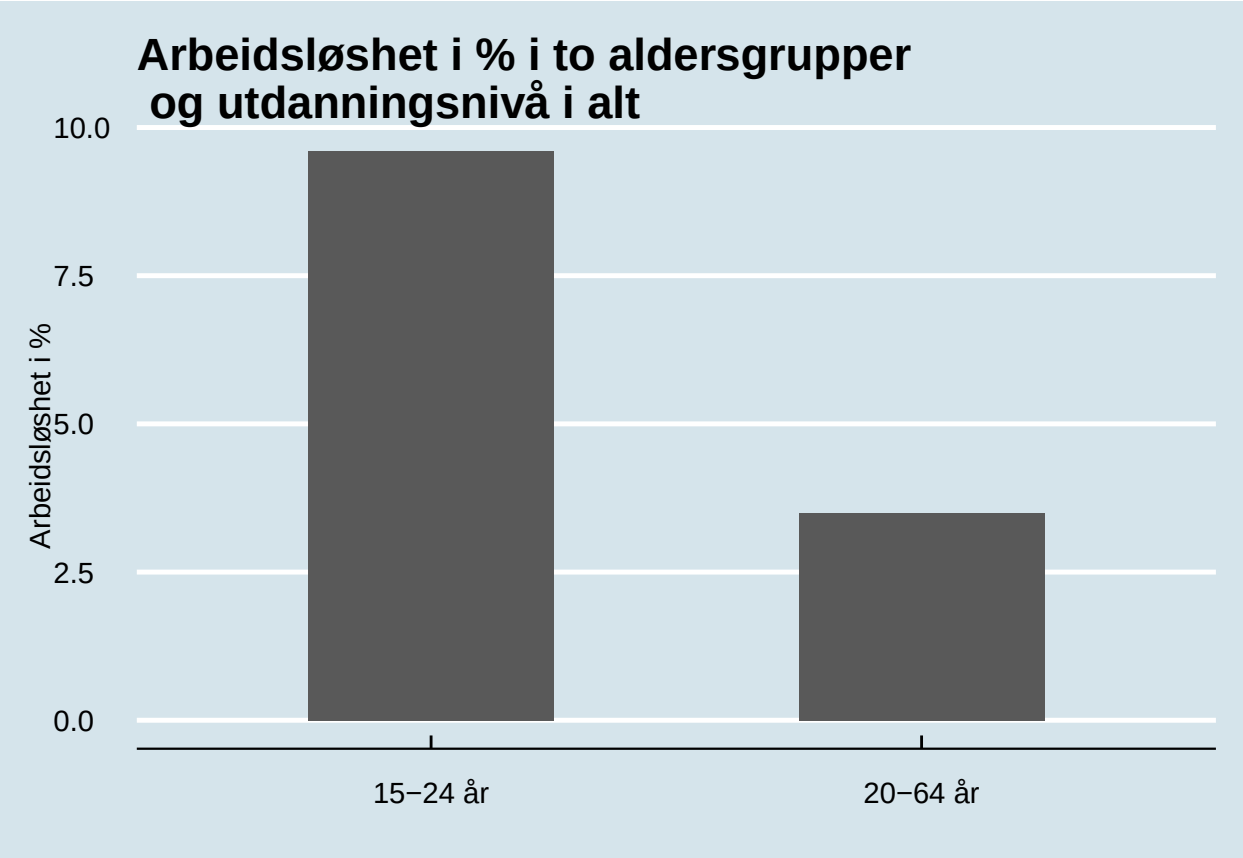
```
      {"format": "json-stat2"}}
'

data <- POST(url , body = data, encode = "json", verbose())
```

```
data <- fromJSONstat(content(data, "text"))

# Plott 3 Enkel plott

data %>% filter(kjønn == "Begge kjønn") %>%
  filter(alder == "15-24 år" | alder == "20-64 år") %>%
  filter(statistikkvariabel == "Arbeidsledige (prosent)") %>%
  filter(år == "2018") %>% filter(utdanningsnivå == "Utdanningsnivå i alt") %>%
  ggplot(., aes(x = alder, y = value)) +
  geom_bar(stat="identity", position = "dodge", width = .5) +
  labs(title = "Arbeidsløshet i % i to aldersgrupper \n og utdanningsnivå i alt",
       x = " " ,
       y = "Arbeidsløshet i %") +
  theme_economist()
```




```
# Oppgave 2

#We want to create a graph that shows the correlation between minimum wages and
#unemployment. We need to search the OECD data frame for data on these topics.
#Search data set for minimum wages and unemployment statistics
dsets<-get_datasets()
```

```
search_dataset("wage",dsets)
```

```
## # A tibble: 10 x 2
##    id                title
##    <chr>             <chr>
##  1 MIN2AVE           Minimum relative to average wages of full-time workers
##  2 MW_CURP           Minimum wages at current prices in NCU
##  3 AV_AN_WAGE        Average annual wages
##  4 AWCOMP            Taxing Wages - Comparative tables
##  5 AEO2012_CH6_FIG3  Figure 3: Time Use by Country Income Level: In middle inco~
##  6 AEO2012_CH6_FIG31 Figure 31: Probability of being waged employed by educatio~
##  7 RMW               Real minimum wages
##  8 TABLE_I6          Table I.6. All-in average personal income tax rates at ave~
##  9 AGE_GAP           Wage gap by age
## 10 IMW               Incomes of minimum wage earners
```

```
search_dataset("unemployment",dsets)
```

```
## # A tibble: 12 x 2
##    id                   title
##    <chr>                <chr>
##  1 DUR_I                Incidence of unemployment by duration
##  2 DUR_D                Unemployment by duration
##  3 AVD_DUR              Average duration of unemployment
##  4 AEO2012_CH6_FIG4     Figure 4: Youth and adult unemployment
##  5 AEO2012_CH6_FIG29    Figure 29: Youth employment and unemployment by educati~
##  6 AEO2012_CH6_FIG19    Figure 19: The trade off between vulnerable employment ~
##  7 EAG_NEAC_DURUNE      Distribution of unemployed adults by duration of unempl~
##  8 PTRUB                PTR for families claiming Unemployment Benefits
##  9 MIG_NUP_RATES_GENDER Employment, unemployment, and participation rates by pl~
## 10 NRR                  Net replacement rate in unemployment
## 11 PTRCCUB              PTR for parents claiming Unemployment Benefits and usin~
## 12 EAG_TRANS_DURUNEMP   Percentage of young adults not in education and unemplo~
```

```
#Data on minimum wages is available in "MIN2AVE"
#Data on unemployment is available in "MIG_NUP_RATES_GENDER"

#MinWage
minwage <- get_dataset("MIN2AVE",
                       filter = "USA+CAN+FRA+GBR+DEU+NZL",
                       pre_formatted = TRUE)
#Selecting years and the min wage as a share of median wage
minwage2019 <- subset(minwage, Time < 2019 & Time >2007 & SERIES=="MEDIAN")
minwage2007_2019 <- subset(minwage2019, Time>2007)

#UnEmpl
unempl <- get_dataset("MIG_NUP_RATES_GENDER",
                      filter = "USA+CAN+FRA+GBR+DEU+NZL",
                      pre_formatted = TRUE)

#Selecting years, the unemployment rate of people born in the country,
# and both sexes
unempl2019 <- subset(unempl,
                     Time<2019 & RATE=="U_RATE" & BIRTH=="NB" & GENDER=="TOT")
unempl2007_2019 <- subset(unempl2019, Time>2007)
```

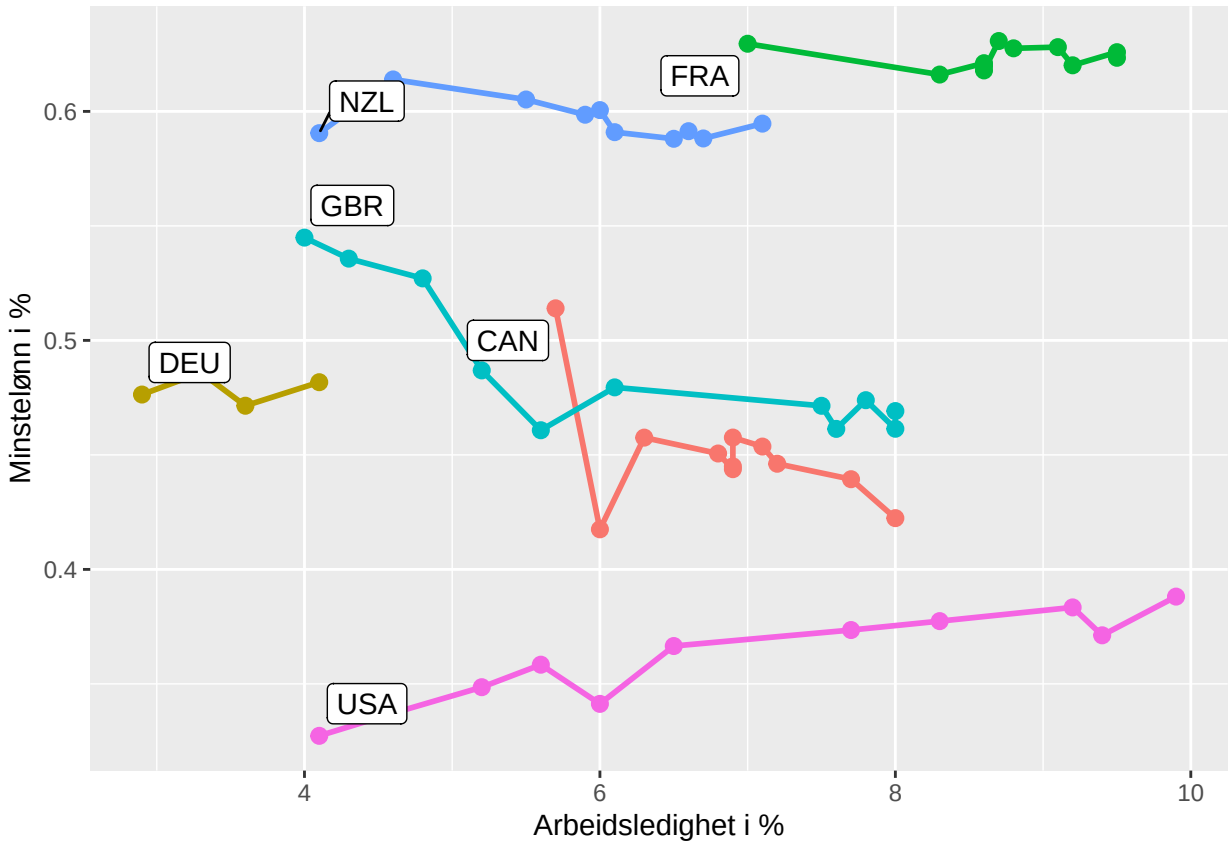
```r
#Combining datasets - we need to merge by both country and year to get
# the right number in the right place
minwage_unempl <-left_join(minwage2007_2019,
                           unempl2007_2019, by=c("COUNTRY","Time"))

#removing countries with missing data
complete_minwage_unempl <- na.omit(minwage_unempl)

#transforming the minimum wage and uneployment rate to numeric variables
complete_minwage_unempl$MinWage_0 <-
  as.numeric(complete_minwage_unempl$ObsValue.x) #MinWage is between 0 and 1, I want to transform it to
complete_minwage_unempl$UnEmpl <-as.numeric(complete_minwage_unempl$ObsValue.y)

#Transforming Minimum wage to percent
complete_minwage_unempl$MinWage <- complete_minwage_unempl$MinWage_0 * 100


#Code for the graph (you need to insert data and variable names)
minwage_plot <- ggplot(complete_minwage_unempl,aes(x = UnEmpl ,y = MinWage_0,
                                                   group=COUNTRY, color=COUNTRY)) + # Put unemployment
  geom_line(aes(group=COUNTRY), size=1) +
  geom_point(size=2.5)+
  labs(x = "Arbeidsledighet i %" , y ="Minstelønn i %")  + #Insert names for x and y-axis.
  theme(legend.position="none")+
  geom_label_repel(
    data=complete_minwage_unempl %>% group_by(COUNTRY) %>% #Insert name of data
      filter(UnEmpl ==min(UnEmpl)), # Insert the name of the x-variable. This will put the country name
    aes(UnEmpl, MinWage_0, fill = factor(COUNTRY),
        label = sprintf('%s', COUNTRY)), #Insert name for x and y variable
    color = "black", # the color of the line around the country tag
    fill = "white") #The color of the fill of the country tag
minwage_plot
```


FRA
NZL
GBR
CAN
DEU
USA
0.6
0.5
0.4
Minstelønn i %
4
6
8
10
Arbeidsledighet i %