SOK-2008-2022-oppgave3

Utfordring 3.1.2

```
# Laster nødvendige pakker
library(readr)
library(ggplot2)
library(tidyverse)
```

```
## Warning: package 'tidyverse' was built under R version 4.1.3
```

```
## -- Attaching packages --------------------------------------- tidyverse 1.3.2 --
```

```
## v tibble  3.1.6     v dplyr   1.0.7
## v tidyr   1.1.4     v stringr 1.4.0
## v purrr   0.3.4     v forcats 0.5.1
```

```
## -- Conflicts ------------------------------------------ tidyverse_conflicts() --
## x dplyr::filter() masks stats::filter()
## x dplyr::lag()    masks stats::lag()
```

```
# We will use the following packages for the assignment:

library(OECD)   #The OECD package
```

```
## Warning: package 'OECD' was built under R version 4.1.3
```

```
library(ggrepel) # The ggrepel package
```

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: 10 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 PTRUB                PTR for families claiming Unemployment Benefits
##  8 MIG_NUP_RATES_GENDER Employment, unemployment, and participation rates by pl~
##  9 NRR                  Net replacement rate in unemployment
## 10 PTRCCUB              PTR for parents claiming Unemployment Benefits and usin~
```

```
# 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)

# Combining datasets - we need to merge by both country and year to get the right number in the right p
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
complete_minwage_unempl$UnEmpl <-as.numeric(complete_minwage_unempl$ObsValue.y)
```

```r
# 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(data=complete_minwage_unempl,
                       aes(x=complete_minwage_unempl$UnEmpl,y=complete_minwage_unempl$MinWage,
                           group=COUNTRY, color=COUNTRY)) +
  geom_line(aes(group=COUNTRY), size=1) +
  geom_point(size=2.5)+
  labs(x = "Unemployment in %" , y ="Minwage in % of median wage",
       title = "Minwage and Unemployment")  +
  theme(legend.position="none")+
  geom_label_repel(
    data=complete_minwage_unempl %>%
      group_by(COUNTRY) %>%
      filter(UnEmpl==min(UnEmpl)),
    aes(UnEmpl, MinWage, fill = factor(COUNTRY), label = sprintf('%s', COUNTRY)),
    color = "black",
    fill = "white")

minwage_plot
```

```
## Warning: Use of ‘complete_minwage_unempl$UnEmpl‘ is discouraged. Use ‘UnEmpl‘
## instead.

## Warning: Use of ‘complete_minwage_unempl$MinWage‘ is discouraged. Use ‘MinWage‘
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```

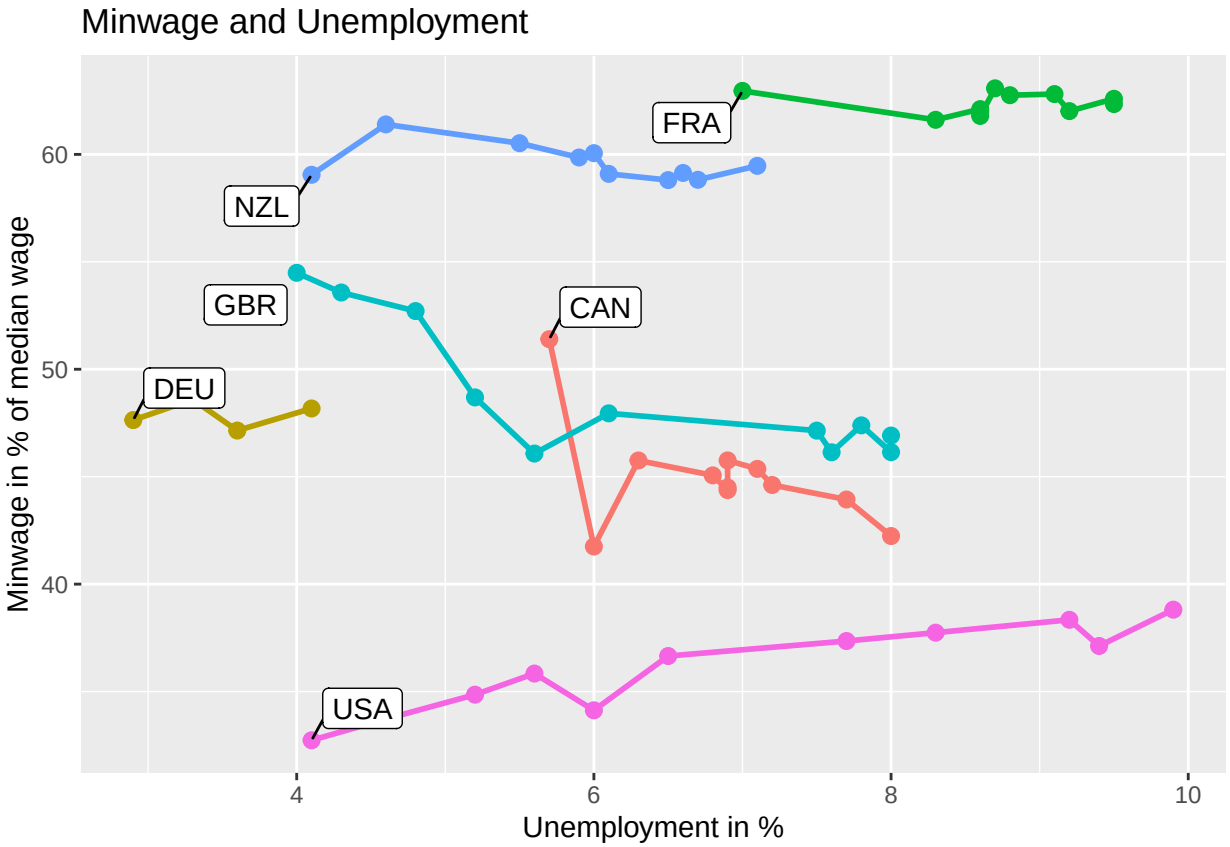
Minwage and Unemployment
Minwage in % of median wage
60
50
40
4
6
8
10
Unemployment in %
FRA
NZL
GBR
CAN
DEU
USA