cartography

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04/10/2020

```
library(readxl)
library(tidyverse)
```

```
## -- Attaching packages --------------------------- tidyverse 1.3.0 --

## v ggplot2 3.3.0     v purrr   0.3.3
## v tibble  3.0.1     v dplyr   1.0.2
## v tidyr   1.0.2     v stringr 1.4.0
## v readr   1.3.1     v forcats 0.5.0

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

```
library(dplyr)
library(janitor)
```

```
##
## Attaching package: 'janitor'

## The following objects are masked from 'package:stats':
##
##     chisq.test, fisher.test
```

```
library (ggplot2)
library(ggthemes)
library(directlabels)
library(gghighlight)
library(sf)
```

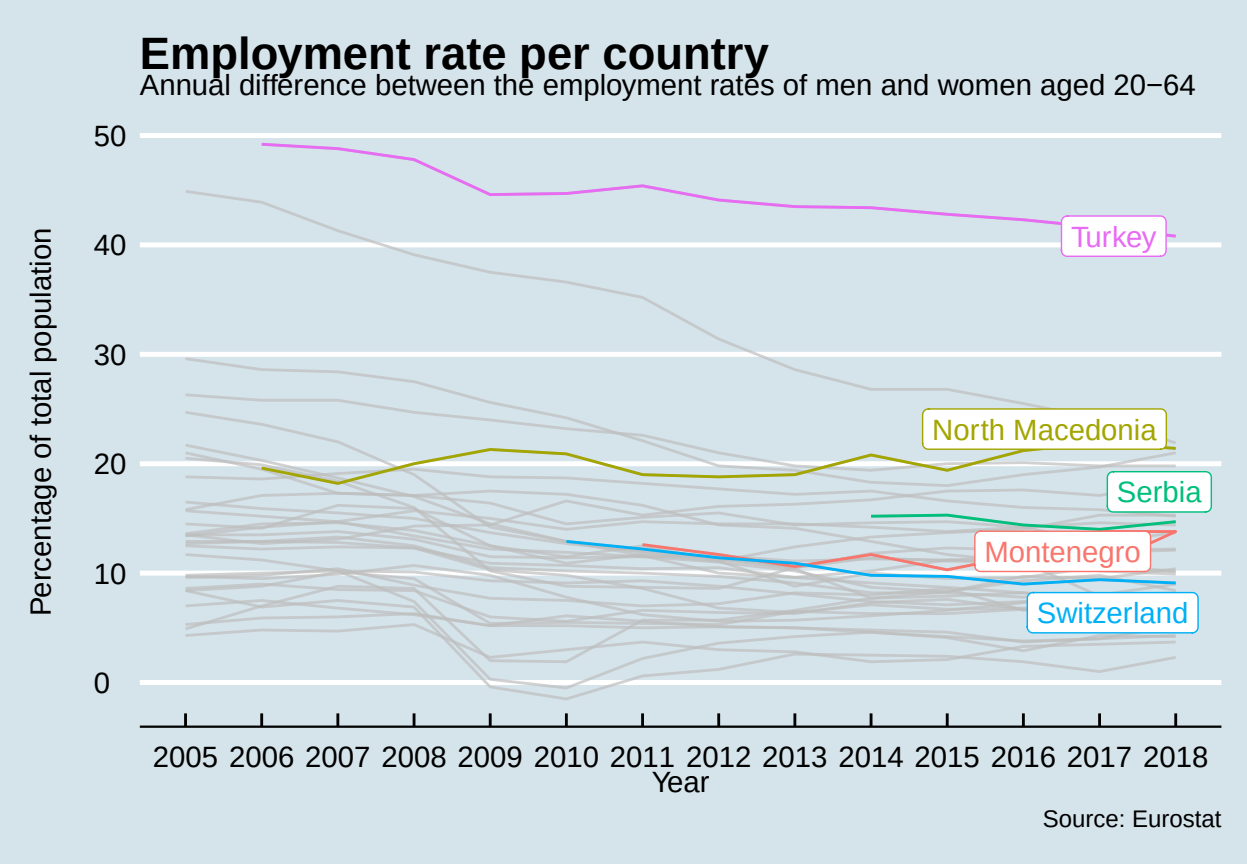
```
## Linking to GEOS 3.7.2, GDAL 2.4.2, PROJ 5.2.0
```

```
library(mapview)
library(mapedit)
library(rnaturalearth)

Eurostat <- read_excel("Data/Eurostat.xlsx",
    sheet = "Sheet 1", col_types = c("text",
```

```
        "numeric", "skip", "numeric", "skip",
        "numeric", "skip", "numeric", "skip",
        "numeric", "skip", "numeric", "skip",
        "numeric", "skip", "numeric", "skip",
        "numeric", "skip", "numeric", "skip",
        "numeric", "skip", "numeric", "skip",
        "numeric", "skip", "numeric"),
    skip = 9,range = "A10:AB52") %>%
  rename(country=time)

# Removing the first raw
Eurostat <- Eurostat[-c(1),]

Eurostat_countries<-Eurostat[-c(1,2,3),]

# Cleaning issue with Germany and France

Eurostat_countries$country[Eurostat_countries$country == "Germany (until 1990 former territory of the Fl

# Removing France and replacing France (metropolitan) by France
Eurostat_countries<-Eurostat_countries[-c(10),]
Eurostat_countries$country[Eurostat_countries$country == "France (metropolitan)"] <- "France"
```

```
# Plotting chart
Eurostat_countries_long <- Eurostat_countries %>%
  pivot_longer(!country, names_to = "year", values_to = "employment_rate")

Eurostat_countries_long %>%
ggplot(mapping = aes(x = year, y=employment_rate, group=country, color=country)) +
  geom_line()+
  scale_colour_discrete(guide = 'none')+
  gghighlight(max(employment_rate))+
  theme_economist() +
  theme(axis.title.y = element_text(margin = margin(t = 0, r = 15, b = 0, l = 0)))+
  labs(title = "Employment rate per country",
       subtitle = "Annual difference between the employment rates of men and women aged 20-64",
       x = "Year",
       y = "Percentage of total population",
       caption = "Source: Eurostat")
```

```
## label_key: country
```



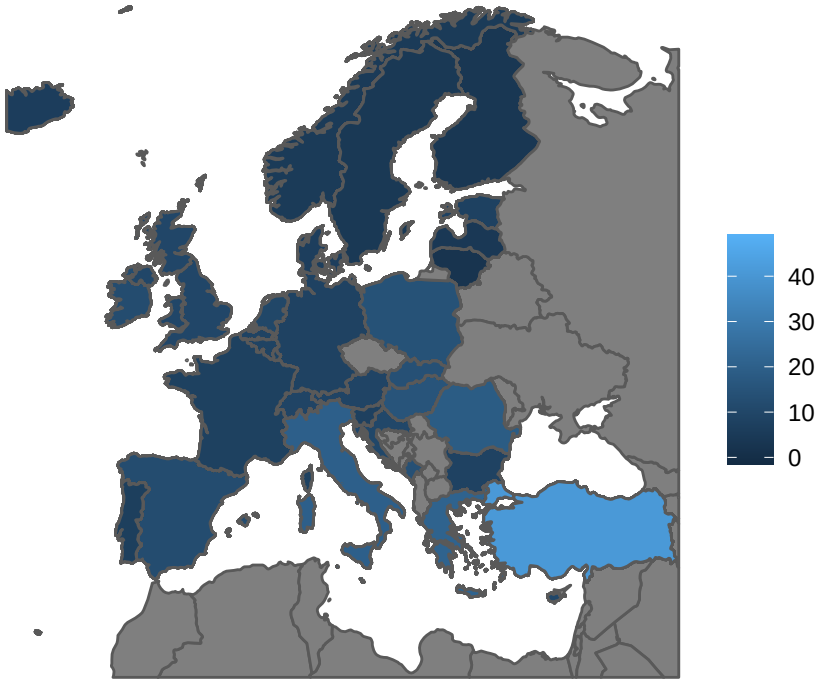

```
worldmap <- ne_countries(scale = 'medium', type = 'map_units',
                         returnclass = 'sf')

europe_cropped <- st_crop(worldmap, xmin = -20, xmax = 45,
                                    ymin = 30, ymax = 73)
```

```
## although coordinates are longitude/latitude, st_intersection assumes that they are planar
```

```
# Joining table to retrive the information on employment rate
europe_cropped_rate <- europe_cropped %>%
  left_join(Eurostat_countries_long, c("admin" = "country"))

# Displaying the information on the European area
ggplot() +
  geom_sf(
  data = europe_cropped_rate,
  mapping = aes(fill = employment_rate)) +
  theme_void()+
  theme(legend.title=element_blank())+
  labs(title = "Gender employment gap in EU",
       subtitle = "Annual difference between the employment rates of men and women aged 20-64",
       caption = "Source: Eurostat")
```

Gender employment gap in EU

Annual difference between the employment rates of men and women aged 20−64



Source: Eurostat