

Nominal house prices data in Luxembourg - Analysis

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```
library(dplyr)
library(ggplot2)
library(purrr)
library(tidyr)
```

Let's load the datasets:

```
commune_level_data <- read.csv(
  "../datasets/house_prices_commune_level_data.csv"
)

country_level_data <- read.csv(
  "../datasets/house_prices_country_level_data.csv"
)
```

Let's compute the Laspeyeres index for each commune:

```
get_laspeyeres <- function(dataset){

  which_dataset <- deparse(substitute(dataset))

  group_var <- if(grepl("commune", which_dataset)){
    quo(locality)
  } else {
    NULL
  }

  dataset %>%
    group_by(!group_var) %>%
      mutate(p0 = ifelse(year == "2010", average_price_nominal_euros, NA)) %>%
      fill(p0, .direction = "down") %>%
      mutate(p0_m2 = ifelse(year == "2010", average_price_m2_nominal_euros,
                            NA)) %>%
      fill(p0_m2, .direction = "down") %>%
      ungroup() %>%
      mutate(pl = average_price_nominal_euros/p0*100,
             pl_m2 = average_price_m2_nominal_euros/p0_m2*100)

}

commune_level_data <- get_laspeyeres(commune_level_data)
```

Let's also compute it for the whole country:

```
country_level_data <- get_laspeyeres(country_level_data)
```

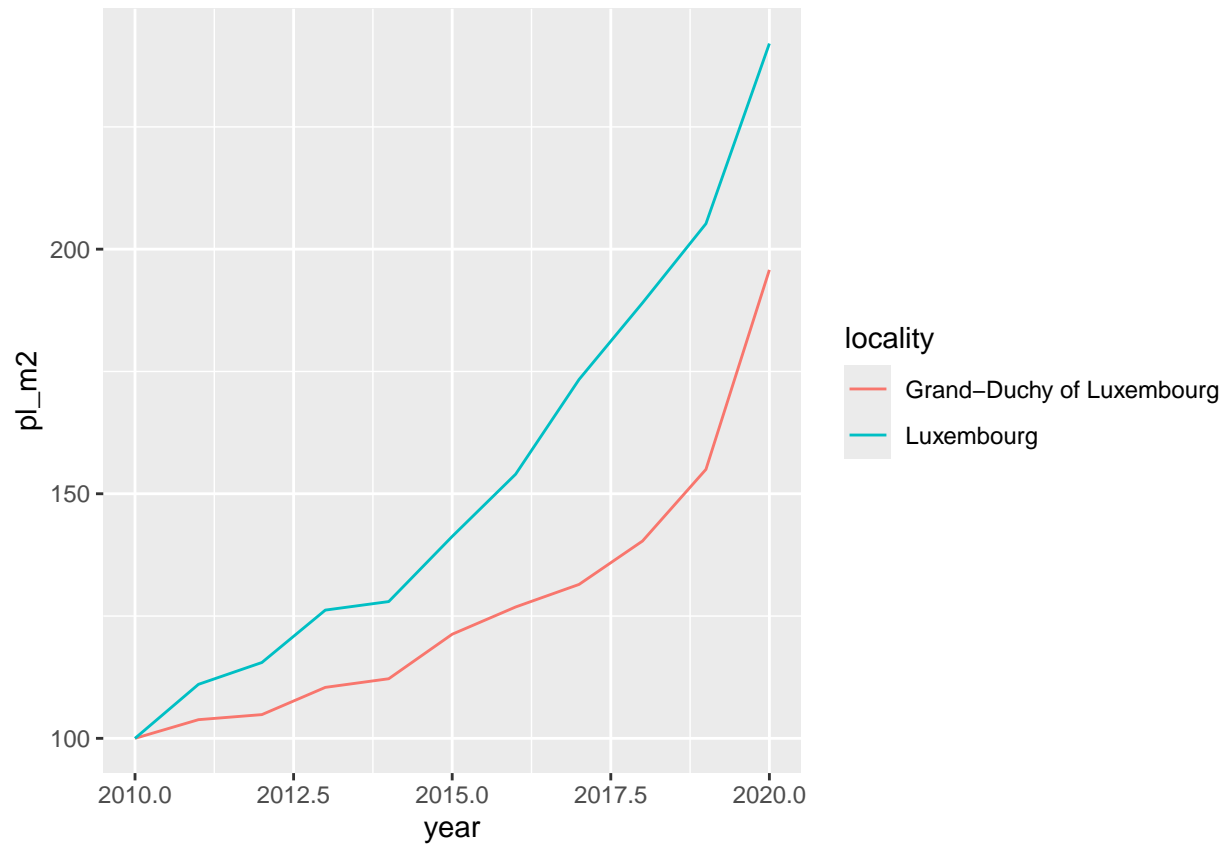
We are going to create a plot for 5 communes and compare the price evolution in the communes to the national price evolution. Let's first list the communes:

```
communes <- c("Luxembourg",  
              "Esch-sur-Alzette",  
              "Mamer",  
              "Schengen",  
              "Wincrange")
```

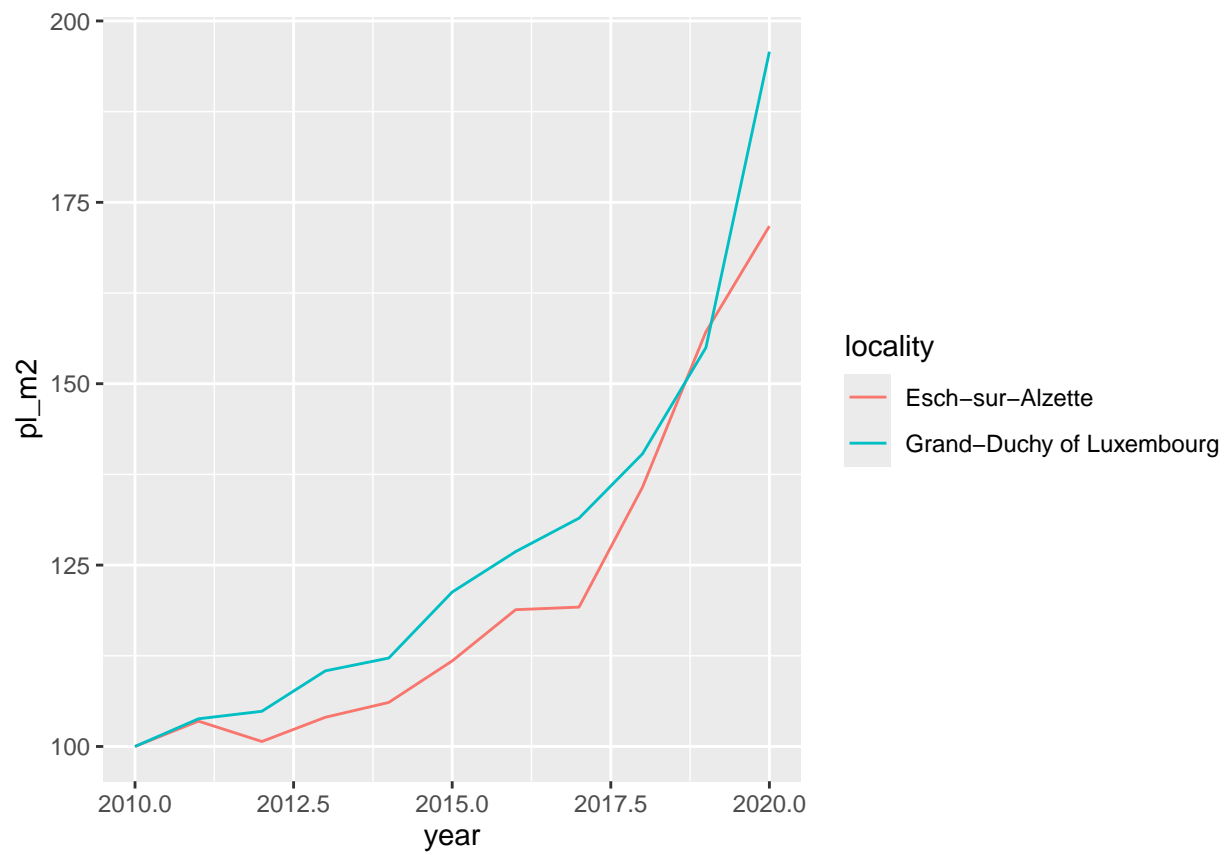
```
make_plot <- function(commune){  
  
  commune_data <- commune_level_data %>%  
    filter(locality == commune)  
  
  data_to_plot <- bind_rows(  
    country_level_data,  
    commune_data  
  )  
  
  ggplot(data_to_plot) +  
    geom_line(aes(y = pl_m2,  
                  x = year,  
                  group = locality,  
                  colour = locality))  
}
```

```
res <- lapply(communes, function(x){  
  
  knitr::knit_child(text = c(  
  
    '\n',  
    '## Plot for commune: `r x`',  
    '\n',  
    '```{r, echo = FALSE}',  
    'print(make_plot(x))',  
    '```',  
  
    ),  
    envir = environment(),  
    quiet = TRUE)  
})  
  
cat(unlist(res), sep = "\n")
```

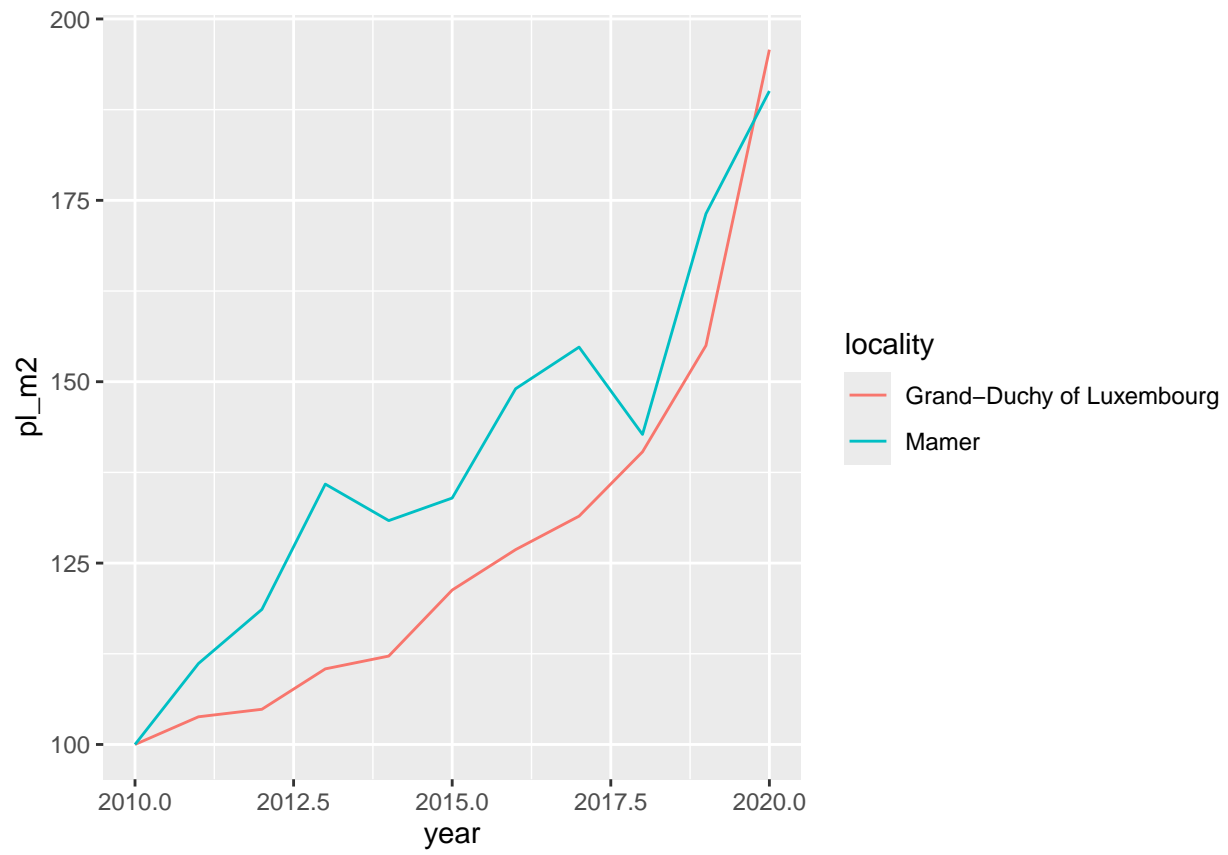
Plot for commune: Luxembourg



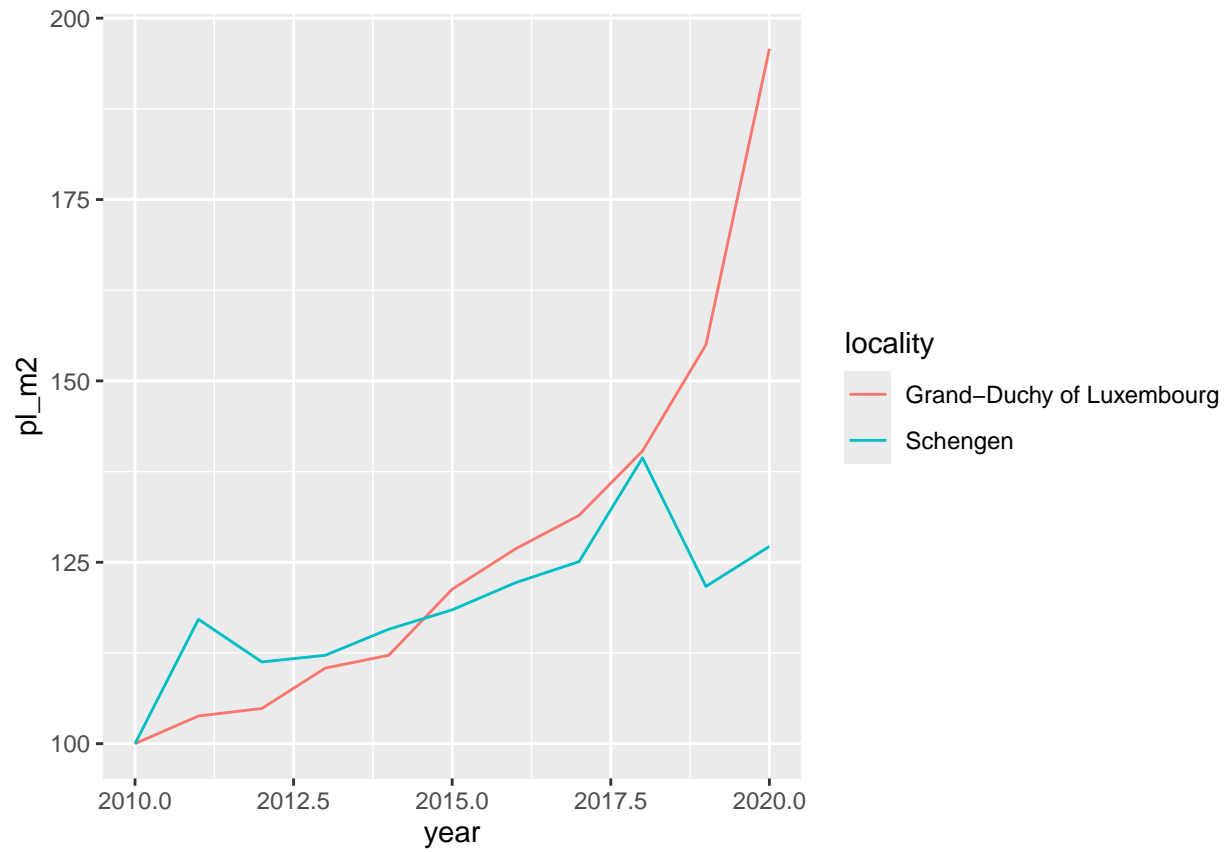
Plot for commune: Esch-sur-Alzette



Plot for commune: Mamer



Plot for commune: Schengen



Plot for commune: Wincrange

