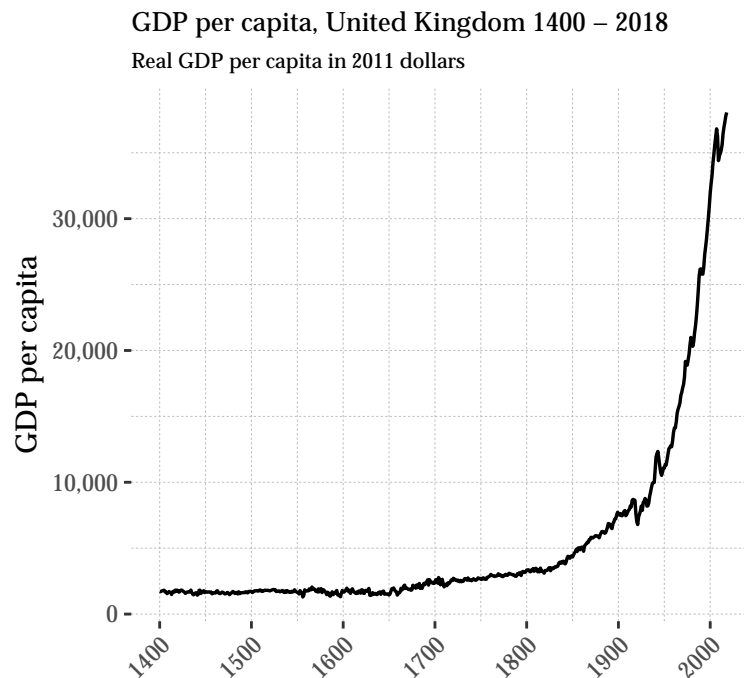# Lab 1 Solutions

Sebastian Ellingsen

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1 The Hockey Stick Chart

This is an R Markdown document. Markdown is a simple formatting syntax for authoring HTML, PDF, and MS Word documents.

When you click the **Knit** button a document will be generated that includes both content as well as the output of any embedded R code chunks within the document.

You can write about your plot here. You can also display the chart as here:

GDP per capita, United Kingdom 1400 – 2018

Real GDP per capita in 2011 dollars

Source: Maddison Project Database (MPD) 2020

Note that the `echo = FALSE` parameter was added to the code chunk to prevent printing of the R code that generated the plot. You can also share code here.

1.1 Code

```r
## Loading data
mpd2020 <- read_excel("mpd2020.xlsx", sheet = 4, skip = 1) %>%
  dplyr::select(year, GBR) %>%
  filter(year >= 1400) %>%
  rename(gdppc = GBR)

## Constructing the plot
p1 <- ggplot(data = mpd2020, aes(x = year, y = gdppc))+
  geom_line(lwd = 0.6) +
  theme(plot.title = element_text(size=10),
        plot.subtitle = element_text(size=8),
        legend.title = element_blank(),
        legend.position="bottom",
        plot.caption = element_text(size=6, hjust = 0),
        axis.title = element_text(size = 11),
        strip.background = element_blank(),
        strip.placement = "outside",
        panel.grid.minor = element_line('grey', size = 0.1, linetype = 'dashed'),
        panel.grid.major = element_line('grey', size = 0.1, linetype = 'dashed'),
        legend.key = element_rect(fill = NA),
        text=element_text(family="Palatino"),
        axis.text.x=element_text(angle=45, hjust=1),
        panel.background = element_rect(fill = "transparent", colour = NA),
        plot.background = element_rect(fill = "transparent", colour = NA))+
  xlab("") +
  ylab("GDP per capita")+
  labs(title = "GDP per capita, United Kingdom 1400 - 2018",
       subtitle = "Real GDP per capita in 2011 dollars",
       caption = "Source: Maddison Project Database (MPD) 2020")+
  scale_x_continuous(n.breaks=8) +
  scale_y_continuous(label=comma)
```